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Edição / Edited by
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Faculdade de Artes e Letras
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O IMPACTO COMUNICATIVO DA MARCA: APRESENTAÇÃO DE UMA METODOLOGIA DE AVALIAÇÃO DA MARCA

Álvaro Sousa
ID+, Universidade de Aveiro

ABSTRACT

This communication is intended to put the discussion a case study developed in the framework of the doctoral thesis by the author on Design (2011). The theoretical framework that supports this research is located in the field of studies on Design, Brand and Institutional Communication.

The aim that the author set out to achieve was to build a methodology for assessing the impact of brands in the public who enjoy it or use them. Thus, the methodology was designed with the objective of simplifying the analysis process in order to assist the designer at the time of decision making while controlling the subjectivity of it.

To show that, exhibit the ends that are to be achieved using the methodology developed, such as the several reasons for its creation, its usefulness and how it works. Presents itself also the sample and the criteria for their choice. Finally and before the conclusions, expounds the phases were development and methods used in each one of them.

KEYWORDS
Brand, Design, Holistic Vision, Methodology, Evaluation.

INTRODUÇÃO

A necessidade de construir uma metodologia de avaliação do impacto comunicativo das marcas focalizada nos públicos a que elas se dirigem, surgiu do fato de todas as ferramentas similares estarem vocacionadas para as mais variadas áreas que orbitam a marca, mas nenhuma delas ter um especial enfoque na área específica do design. Assim sendo, desenhou-se uma metodologia que permitisse, por um lado, avaliar marcas existentes tanto ao nível dos valores por elas transmitidos, como os atributos percebidos pelo destinatários e também pelo desenho das marcas em si, e por outro, apoiar o designer nos momentos da tomada de decisões.

PORQUÊ UMA METODOLOGIA?

As principais razões encontradas relacionam-se com o fato das ferramentas existentes serem demasiado complexas, especializadas, morosas, específicas para a gestão ou o marketing, ou, ainda, para avaliar marcas de grande implementação no mercado.

A ausência de uma metodologia capaz de conciliar rapidez e baixo custo na avaliação do desenho das marcas foi outra das razões tidas em conta, assim como o fato da apreciação das marcas se fazer, na maior parte das vezes, a partir da intuição e do sentido de gosto – sendo, por isso, demasiado subjetiva e pouco fundamentada.

Não menos importante foi também a percepção de o consumidor ser, muitas vezes, relegado para segundo plano, por forma a atender à opinião, nem sempre objetiva, do cliente.

QUAL A SUA UTILIDADE?

O uso desta metodologia permite-nos uma avaliação efetiva de marca, possibilitando a detecção de problemas não só ao nível do desenho, mas também ao nível da imagem projetada e da imagem percebida.

Permite-nos também, por um lado, o seu uso como ferramenta mediadora entre o designer e o cliente, usando o primeiro argumentos baseados nos dados recolhidos junto dos consumidores, mas também, por outro, usá-la como apoio, através do reforço dos argumentos, às decisões tomadas pelo designer no ato do projeto.

Por último, permite-nos otimizar dados e obter tanto uma visão holística como visões parcelares da marca.

COMO FUNCIONA?

O seu funcionamento é feito através da combinação de 3 variáveis:
A entrevista, onde é feita a recolha de informação junto dos consumidores;
O estudo de caso recolha de informação junto da marca;
Ferramentas pré-existentes de avaliação de marcas gráficas onde é feita a análise, compilação e síntese de ferramentas e metodologias:
15 parâmetros de alto rendimento de Chaves e Belluccia (Chaves, 2003)
taxonomia das marcas (Mollerup, 1997)

CONSTITUIÇÃO DA AMOSTRA

A amostra foi constituída por um agrupamento organizado por quatro marcas portuguesas – Galp Energia, Vista Alegre, TAP Portugal e Delta Cafés e por um conjunto de 44 sujeitos-alvo.

Os critérios para a escolha das marcas que constituem o primeiro grupo (Amostra A) foram a dimensão de cada uma delas e o facto de liderarem o seu segmento do mercado, liderança essa que teria também de ser reconhecida pelos consumidores.

O segundo grupo (Amostra B) dividiu-se em dois (B1 e B2), sendo cada um deles constituído por 36 indivíduos que podiam, cada um deles, integrar apenas um ou fazer parte dos dois subgrupos. Os critérios para integrar esta amostra exigiam a maioridade do indivíduo, o reconhecimento da marca e sua atividade e ser, ou ter sido, consumidor dos produtos/serviços oferecidos pela marca pelo menos numa ocasião. Devido à periodicidade do consumo de cada uma das marcas ter uma grande variação temporal o fator "fidelidade à marca" não se tornou critério de seleção. Também o género, idade, habilitações académicas e estatuto social foram considerados como não essenciais para a distinção de opiniões, pelo que não foram ponderados para a constituição da amostra.

MÉTODOS E FASES DA METODOLOGIA

Os métodos utilizados na recolha, registo e análise dos dados foram a Constelação de Atributos (Moles, 1990), o Diferencial Semântico (Osgood, 1967) e o da Representação Gráfica Multivectorial de Aguiar (2002), tendo o estudo sido dividido em quatro fases: uma fase zero, em que se definiu e preparou o estudo a desenvolver, seguido de três fases efetivas que se passam a descrever de forma sucinta.

Na fase um recolheram-se, através de uma entrevista que recorreu ao método da Constelação de Atributos, os dados junto do público alvo (Amostra B1). O uso deste método permitiu a recolha das qualidades que os públicos, de forma intuitiva e espontânea, reconheceram realmente nas marcas.

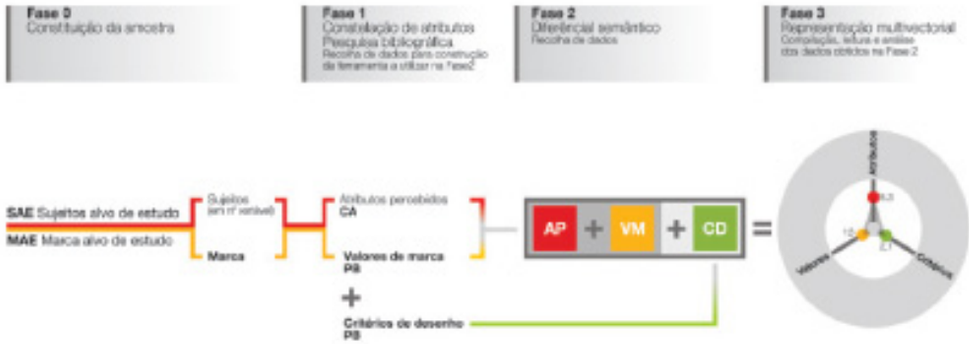
Com os dados recolhidos na fase um e na que a precedeu, construiu-se a entrevista que serviu de suporte à fase dois. Esta recorreu ao método Diferencial Semântico e era constituída por 3 grupos de 7 pares de opostos cada.

A utilização deste método permitiu aumentar a relevância dada ao significado conotativo em detrimento do denotativo, criando um instrumento ou ferramenta simples mas de grande eficácia para a recolha de dados difíceis de mensurar. A forma como as marcas foram percepcionadas pelos consumidores tornou-se assim mais fácil de se perceber.

Na fase três procedeu-se à codificação, análise e interpretação dos dados recolhidos na fase dois. Assim, conseguiu-se obter uma medição objetiva de significados, posicionando de uma forma fiável os sujeitos-alvo relativamente a cada uma das categorias de cada par de opostos de cada marca.

Para uma melhor e mais eficaz leitura dos resultados, recorreu-se à representação multivectorial por forma a obter uma percepção clara e objetiva da força comunicativa da marca.

Com a conjugação das diversas fases e distintos métodos aplicados foi possível realizar uma metanálise cujos resultados conduziram à construção da metodologia em destaque.



CONCLUSÃO

Os designers têm, hoje, a consciência de que os seus projetos se destinam a ser usados pelas pessoas: os consumidores ou destinatários já não são entidades ausentes e sem rosto, mas alguém que pela interpretação se torna em co-autor e participante no processo.

Daí emerge a necessidade genuína de conhecer aqueles a quem se quer comunicar a marca: o que pensam, sentem ou pretendem obter ela. Tudo isto reforça a emergência de uma ferramenta ágil, de fácil manuseamento e leitura percetível, de forma a permitir uma avaliação da marca a partir do público-alvo.

Assim, o uso desta metodologia permite ao designer o acesso a informação privilegiada sobre a marca visto obter a perceção da mesma a partir daqueles a quem ela se destina, isto é, os consumidores. Fornece-lhe também dados fiáveis que lhe permitem não só a construção de argumentos fortes e credíveis, como também clarificar áreas de intervenção – desconstruindo assim estereótipos, preconceitos e ideias pré-definidas que, muitas vezes, quem encomenda o projeto tem sobre a marca – possibilitando não só ao designer assumir um papel de mediador entre os distintos interessados, como também reforça a importância do papel do projetista e das suas decisões ao nível do desenho.

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O LIVRO NO MUNDO DIGITAL

Marta Borges

RESUMO

Este artigo centra-se na problemática da mudança e transformação do mundo editorial contemporâneo, procurando analisar algumas das principais implicações destas mudanças ao nível do design gráfico e editorial, a diversos níveis. Partindo do pressuposto de que são hoje ainda, em larga medida, imprevisíveis os contornos desta mudança e o seu desfecho, procura-se analisar os diversos modos como se tem vindo a pensar e concretizar esta passagem da edição em papel para os novos suportes digitais bem como identifica-se lacunas a suprir ao nível da investigação neste campo. Finalmente, procura-se discutir prospetivamente o contributo do design e dos designers para o enriquecimento da experiência da leitura e das competências por ela desenvolvidas.

PALAVRAS-CHAVE

Leitura; Livros; E-Books; Design Editorial; Design Para Suportes Digitais.

O LIVRO NO MUNDO DIGITAL

As Novas Tecnologias de Informação e Comunicação (NTIC) têm contribuído decisivamente para as rápidas e profundas transformações do contexto social, cultural e económico em que nos inserimos. À semelhança de outros campos, também o setor editorial se tem alterado.

Nas últimas décadas, surgiram novas formas de produção, edição e distribuição de livros. As NTIC e, em particular, a Internet, têm promovido várias formas de produção nos mais diversos tipos de documentos eletrónicos, bem como o desenvolvimento de formas de distribuição e acesso inovadoras (seja em termos de hardware, como de software para a consulta desses documentos).

Num contexto em que se multiplicam, a um ritmo acelerado, os formatos, meios e canais de edição, distribuição e comercialização de livros eletrónicos, torna-se difícil definir adequadamente o conceito de livro eletrónico. Se atendermos ao conteúdo, a definição de livro, revista, jornal ou outra publicação eletrónica torna-se uma tarefa verdadeiramente complexa pois num extremo, temos as edições que se limitam a converter o conteúdo impresso para o formato digital, preservando o aspeto original de forma mais ou menos fiel (como, por exemplo, as publicações em formato PDF). No extremo oposto, encontramos uma enorme diversidade edições em vários de formatos, disponibilizando ao leitor mais ou menos conteúdos multimédia e diferentes funcionalidades. Encontramos publicações eletrónicas em diferentes formatos adaptados aos diversos e-readers (hardware e/ou software) disponíveis no mercado. Os formatos mais populares são o ePUB (formato recomendado pela International Publishers Association, pelo International Digital Publishing Forum e pelo World Wide Web Consortium (W3C) para a apresentação de publicações eletrónicas), o Mobi (para livros especialmente desenvolvidos para o Kindle da Amazon.com) e o app (da Apple Inc., talvez o que melhor explora as pontencialidades do ecrã multitoque e dos conteúdos multimédia sendo, por isso, apontado por vários autores como o "futuro" das publicações eletrónicas).

Atualmente, verifica-se uma coexistência, quase sempre em simultâneo, destes diferentes formatos, o que denota o carácter ainda experimental da publicação eletrónica. De uma forma geral, nos formatos eletrónicos predomina uma atitude de continuidade, com a representação quase literal do modo como tradicionalmente conhecemos os livros. Para além da manutenção dos elementos textuais, encontramos nos livros eletrónicos metáforas que nos são familiares: continuarem a ser utilizados termos

como livro, revista e jornal, e também outro tipo de expressões como índice, capítulo, página (Sousa, 2010:198). Utilizam-se ainda as noções de biblioteca, livraria, estante e prateleira para designar os espaços de armazenamento, distribuição e comercialização de publicações eletrónicas.

Neste contexto, também o comércio digital de e-books tem procurado imitar alguns dos serviços que tradicionalmente se poderia encontrar em livrarias e bibliotecas. É, assim, frequente que ao comprar um livro online, o leitor receba várias sugestões e informações adicionais sobre esse e outros livros, os seus autores e temáticas relacionadas.

Desta forma, mimetiza-se a experiência de leitura e manuseamento de um livro eletrónico à do livro impresso.
Recuperando a tese de Marshall McLuhan (2008), segundo a qual o conteúdo de qualquer meio (medium) é sempre outro meio, vários autores defendem uma posição de evolução enquanto rutura. Acreditam assim que este processo não é, por isso, uma simples tradução, mas antes, uma interpretação que condiciona a forma como o conteúdo é apresentado.
Deste modo, a par da reconcetualização do livro enquanto objeto assistimos à redefinição do papel do editor, autor e leitor através da proposta de uma nova experiência de escrita e de leitura.

A produção e edição de livros resulta, cada vez mais, de um processo de trabalho maioritariamente (ou até, totalmente) digital. Os conteúdos podem ser, por isso, explorados de diferentes formas para além da tradicional edição impressa. Encontramos "perante uma realidade completamente nova na sua concepção, na sua realização e na sua fruição. E que, nessa medida, implica autores e editores com capacidade inéditas, entre a edição de livros, a realização televisiva ou cinematográfica e a produção musical" (Laterza apud Furtado, 2007:28-29).
Por seu turno, o leitor passa a ter um papel ativo na co-construção do texto, já que pode organizar o argumento, atribuir novos significados e ampliar o seu sentido (Barthes, 1984).

O advento das NTIC dá também lugar à emergência de uma nova realidade em que, pela primeira vez, os textos se deparam com questões relacionadas com a mediação tecnológica (Ferreira: 2006:17; Furtado, 2007:75).
Estes mediadores tecnológicos são parte intrínseca da leitura e a relação "directa e física com o objecto livro – incluindo no plano das posturas corporais – são aspectos

postos agora em causa com os novos dispositivos de leitura" (Furtado, 2007:75). A leitura torna-se numa prática cada vez mais complexa já que os textos, que partilham agora o espaço com elementos multimédia e/ou não-textuais.

Para além das questões ergonómicas, ainda mal documentadas, a transição do suporte impresso para o eletrónico coloca questões cognitivas pouco investigadas. É possível encontrar algumas referências que nos permitem identificar duas posições distintas. A primeira conceção defende que a leitura mediada pelas NTIC é fragmentada e superficial já que o hipertexto, os elementos multimédia e os diversos serviços proporcionados pelas NTIC interrompem sistematicamente a leitura, acentuando a dificuldade que os leitores têm em se concentrarem de modo duradouro e, consequentemente, em sedimentar o conhecimento (Carr, 2012; Ulin, 2010).

A segunda defende que os livros eletrónicos são capazes de estimular a imaginação e reflexão, encorajar as tendências associativas, desenvolver a capacidade de negociação e desconstrução de imagens, visuais e verbais, a capacidade de processar fluxos múltiplos de informação de forma simultânea, a propensão para resolver problemas através da experimentação (tentativa e erro), e até a coordenação motora e agilidade (Bernat, 2008; Gros, 2008; Lanham apud Furtado, 2007:54; Lopes, 2012; Purcell, 2013; Vaz, 2006).

Contudo, o aumento da complexidade dos textos exige não só a capacidade de identificar os elementos representados mas também de os descodificar e interpretar. Poderíamos assim afirmar que escrita e a leitura exigem, neste novo contexto, um ensino e aprendizagem específico (Vaz, 2006: 446). A necessidade de um novo tipo de literacia orientada para as NTIC não está, porém, isenta de gerar riscos, podendo vir a acentuar desigualdades já existentes ou até mesmo para criar de novas formas de exclusão (Paisana, 2013:43; Catarino, 2013:16). Assim, para promover o desenvolvimento de competências, ou pelo menos não contribuir para acentuar as desigualdades a este nível, a conceção e produção de livros eletrónicos deve potenciar alguns dos aspetos relacionados com o processo de receção, manipulação e transmissão da informação e que contribuem para o desenvolvimento da chamada "cultura participativa" (Paisana, 2013). Livros, revistas, jornais e outras publicações eletrónicas deverão então fomentar a interação, a apropriação e a transmissão de informação com a capacidade de identificar diferentes perspetivas e procurar alternativas, resolvendo problemas.
Importa aqui referir, ainda que de forma sucinta, algumas das práticas mais comuns no desenvolvimento de aplicações para smartphones, phablets e tablets que, em nosso entender, permitem precisamente estimular a interação, apropriação e transmissão de informação.

Destaca-se, em primeiro lugar, o papel central que os conteúdos agora podem ocupar – a composição do texto poderá ser mais cuidada e poderá apresentar-se um grande conjunto de elementos não-textuais. A atenção dada aos conteúdos não se traduz apenas na quantidade mas também sua qualidade – os vários autores têm vindo a desenvolver estilos de escrita mais adaptados a este medium e as ilustrações, fotografias e vídeos apresentam uma maior resolução. Este conjunto de alterações deve-se, por um lado, à tomada de consciência das especificidades destes novos suportes e, por outro, à própria evolução das NTIC.

Outra tendência emergente no modo de apresentação dos conteúdos é o "storytelling" que se destaca pelo desenvolvimento de pequenas narrativas com o objetivo de seduzir e envolver o leitor.

Relativamente aos modos de interação assiste-se à substituição progressiva dos menus no topo ou margens por formas de interação menos convencionais. Importa aqui realçar duas das estratégias amplamente utilizadas na produção de publicações digitai: por um lado, a "gamification", prática que se caracteriza pela utilização do jogo com o objetivo de envolver os leitores; por outro lado, a planificação dos conteúdos sobre uma "folha" ilimitada – a "infinite canvas" – que pode ser percorrida, pelo leitor em todas as direções.

Outra tendência importante é o desenvolvimento dos chamados responsive layouts – desenhos assentes em grelhas dinâmicas com conteúdos flexíveis que se ajustam às dimensões do ecrã..

É também evidente o abandono progressivo do chamado "skeuomorphic design" em detrimento do "flat design". Amplamente utilizado nos human computer interfaces, o "skeuomorphic design" caracteriza-se pelo uso de exaustivo de formas geralmente arredondadas, texturas, vasto conjunto de cores, gradientes e sombras. Por oposição, o "flat design" caracteriza-se pelo desenho simples e minimal com gráficos predominantemente retos e pela escolha de um número reduzido de cores, geralmente, planas e opacas.

Finalmente, importa ainda mencionar que a clareza e legibilidade dos elementos textuais e não-textuais dependem também da própria organização dos conteúdos.

Vários autores consideram fundamental dividir o conteúdo em unidades lógicas, estabelecendo hierarquias capazes de estruturar as relações entre essas unidades (Lynch et al., 2004:38).

Robert Darnton (2009:76) sugere que as publicações eletrónicas devem obedecer a uma organização vertical onde, num primeiro nível se encontra a informação elementar e nos níveis seguintes a informação complementa. Desta forma, os leitores podem ter acesso a informação mais superficial ou mais aprofundada mediante o número de níveis consultados.

Em conjunto, estes vários fatores podem contribuir para uma maior clareza e legibilidade dos interfaces e dos próprios textos e, consequentemente, promover o desenvolvimento de (novas) competências.

Para concluir, importa salientar o carácter profundamente circular e algo hermético da longa discussão em torno da "morte do livro" que, decorrida mais de década e meia desde o seu início, se encontra hoje num certo impasse. Pelo contrário, como vimos, é fundamental colmatar o défice de estudos sobre as questões relacionadas com a leitura em suportes digitais, as suas consequências físicas e cognitivas e sobre as formas mais adequadas de desenhar publicações eletrónicas.

Embora existam hoje livros eletrónicos verdadeiramente arrojados muitos outros tendem ainda a mimetizar o suporte "tradicional", em papel. Na realidade, como têm apontado diversos investigadores, para contrariar a tendência para a cópia (hoje facilitada pela Web 2.0) e motivar os leitores para a compra destas publicações, é urgente apostar na melhoria dos conteúdos dos livros eletrónicos e nas formas de distribuição. Enquanto designers estas questões constituem um desafio no exercício da profissão. Citando Hugh McGuire, neste novo contexto, devemo-nos questionar: "How appropriate is the visual narrative style for the format? What effect do the added features of voice and movement have on the reading experience? What qualities do the interactive features add to the experience? Are there features that interrupt the comprehension experience for the reader? What experiences can the digital world offer that print alone cannot readily do? What can the print world continue to offer for which digital experiences may have limitations?" (McGuire apud Webb, 2012:11).

Um dos grandes desafios que hoje se colocam no desenvolvimento de publicações digitais é assim evitar mimetizar o suporte "tradicional" promovendo possibilitando novas publicações e formas de leitura.

Para responder a este desígnio, os designers têm hoje que se reinventar, não só reforçando algumas das suas competência tradicionais (ao nível da tipografia e da legibilidade, por exemplo), mas também adquirindo novas competências (ao nível da programação e da produção e utilização de conteúdos multimédia). Importa ainda que os designers ganhem consciência da importância de conseguirem estabelecer um diálogo interdisciplinar com profissionais de outras áreas que são hoje fundamentais para concretizar projetos com a exigência e complexidade (técnica, tecnológica e financeira) associada ao universo das publicações digitais. Este é pois, em síntese, o repto que hoje se coloca ao design gráfico e editorial: contribuir de forma crítica, informada e actualizada para o debate teórico e prático acerca da evolução dos livros eletrónicos.

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THE DISCOURSES OF ALTERITY EMERGING FROM THE COLLABORATIVE CREATION OF THE SIMULATED ENVIRONMENT FOR THEATRE

Sandra Gabriele
Department of Design, York University, Canada
Stan Ruecker
Institute of Design, Illinois Institute of Technology,
Jennifer Roberts-Smith
Dep. Drama and Speech Communication, University of Waterloo
Teresa Dobson
Dep. Language and Literacy Education, University of British, Columbia
Stéfan Sinclair
Dep. Languages, Literatures, and Cultures
Omar Rodriguez
University of Alberta
Shawnathan DeSouza-Coelho
University of Toronto, Canada

ABSTRACT

The Discourses of Alterity Emerging from the Collaborative Creation of the Simulated Environment for Theatre Collaborative making is a form of research activity that results in an idea being reified so that it can be collectively interrogated, interpreted, and redefined

(Ruecker et al. 2011). The iterative nature of the design process allows for true collaboration in a research context, where researchers participate, equitably. In contrastto the power hierarchy common to client-designer relationships in professional graphic design practice, a successful collaborative research project allows for meaningful participation because each member of the team is equally invested in the work. This can result not only in interesting prototypes for products, systems, processes, and experiences, but also in new ways of understanding the topic of the research activity. Throughout the process, the strategic deployment of the designer's practice knowledge is essential to a good outcome, but equally important are the contributions from the programmers, domain experts, user experience specialists, and project managers. In this case study, we examine the central role of collaborative making in the design of the Simulated Environment for Theatre (SET), an interdisciplinary research project now in its seventh year, involving a series of three research grants, with researchers from two countries, seven universities, and a dozen disciplinary backgrounds. We argue that the specific practices of this project that have contributed to its continuation and success constitute a rare opportunity to examine how collaborative making helps us to develop a discourse of invention that is nonetheless rooted in the tradition of practical attention to details that is fundamental to design practice. As Latour (2008) has it: "A mad attention to the details has always been attached to the very definition of design skills." In particular, we structure our analysis of the "discourse of invention" around the shifting role of the design team during the three major reconceptualizations of the project, from an orthographic view of the stage based on the perspective of literary studies, where text is the fundamental element of a play, to a scale model view predicated on the importance of the audience perspective, which also incorporates the theoretical "line of action" as an understanding of production based in theatre studies, to the director-centric "sketchbook" iteration currently under development. At each of these stages, design has arguably comprised the grounds for the entirety of the v, in part to accommodate our changing understanding of our audience for the project, but also as we have grown to believe that the provision of alternatives for collaborative conversation is what constantly fuels the next stages of our thinking. For example, when we began to address the question "what should avatars look like," we saw literally hundreds of variations in multiple iterations before settling on the set we now have. Our experience was similar in thinking about items in the tool palettes, the visual appearance of the character timelines, the complexity of the lines of movement for the characters on stage, and so on. Throughout this process, we began over time to find ourselves within a research discourse of alterity, where thinking about the differences between sets of alternatives formed the primary focus for most of our team discussions. We believe that this discourse is strengthened and supported by the designer's practice knowledge, which is in turn inspired by the theoretical considerations brought to the fore by our theatre experts, tempered by our software development researchers and

project management team, and informed by the feedback from the researchers studying user experience. We use Nigel Cross' Designerly Ways of Knowing (2007) as framework to demonstrate how the unique characteristics associated with the way in which designers think and practice graphic design supported our interdisciplinary research team in the development of software for the visualization of theatrical productions. We have concluded that our ongoing discourse provides an environment for innovation that is potentially reproducible – given an appropriate attention to details – for a wide range of projects in research and business. References Cross, Nigel. Designerly Ways of Knowing. Basel/London: Birkhäuser, 2007. Latour, Bruno. A Cautious Prometheus, 2008. www.bruno-latour.fr/sites/.../112-DESIGN-CORNWALL-GB.pdf Ruecker, Stan, Milena Radzikowska, and Stéfan Sinclair. Visual Interface Design for Digital Cultural Heritage: A Guide to Rich-Prospect Browsing. Farnham, Surrey: Ashgate Publishing, 2011.

KEYWORDS
Collaboration, design process, graphic design, interdisciplinary, interface design

TEU CORPO VISUAL MEU DESEJO CARNAL – A VISUALIZAÇÃO DA FIGURA HUMANA E SUA ARTICULAÇÃO GRÁFICA NO OBJECTO DE DESIGN EDITORIAL PARTINDO DE KAREL TEIGE

Jorge dos Reis
Faculdade de Belas Artes, U. Lisboa. Portugal

RESUMO

A importância de Karel Teige no desenvolvimento do design gráfico fica patente quando em 1923 realiza um conjunto de ilustrações construtivistas para o livro Abeceda (Alfabeto) de Nezval. A relação entre o grafismo e a imagem da sensualidade do corpo humano enquanto valores emancipados e conjugados são explorados como nunca até aqui. Cada composição é formada por uma fotografia de uma das coreografias criadas pela bailarina Milca Mayerova e por uma estrutura visual que representa as letras do alfabeto. Estamos perante um objecto experimental que convoca vários campos de acção artística: dança moderna, design, tipografia, fotomontagem e linguística, resultando num todo onde erotismo, sensualidade, desejo e prazer se evidenciam quando corpo e grafismo se conjugam, exigindo-se ao tipógrafo que saiba ligar o movimento do corpo que gera a letra juntamente com o texto prescrito.

Karel Teige (1900-1951) é uma figura fundamental da Nova Tipografia e da vanguarda europeia que participou em todas as controvérsias desse tempo turbulento. Editou uma revista, denominada ReD, que seria um dos documentos mais importantes e influenciadores desse tempo de crepúsculo ideológico. Como muitos dos autores desta época a prática de várias actividades artísticas era fundamental. Karel Teige produziu pinturas, colagens, fotomontages, tipos de letra, capas de livros, onde desponta também um trabalho de crítica e escrita teórica sobre arte e arquitectura.Karel Teige é o melhor exemplo de uma filosofia de cross-fertilization que caracterizou esta geração de autores modernos ligados à tipografia, como El Lissitzky, Aleksandr Rodchenko, Piet Zwart, e Werkmann. Nestes autores a prática de uma disciplina fertilizava de forma efectiva e ponderada a disciplina ao lado. Foi assim possível que o trabalho no campo da tipografia pudesse ganhar uma atitude de peça singular, de objecto de arte com direito próprio. Neste sentido, Karel Teige é o melhor exemplo de um autor da vanguarda que transladou a letra e o desenho da escrita da esfera da actividade comercial de design para o contexto das artes plásticas. A elevação dos padrões de composição e exigência estética foram cruciais para esta acção, simultaneamente concertada e individual. Esta cross-fertilization é responsável pelo facto da tipografia ser poesia gráfica, pelo facto da tipografia ser matéria prima de poetas.

Karel Teige acreditava firmemente numa ars una, todas as artes como uma só, livre de separações forçadas e artificiais. O conceito de ars una reflecte-se no seu trabalho e na sua prática como veremos. A este conceito não é alheio o facto de Karel Teige ter convivido com outros autores da sua geração como André Breton e Le Corbusier em França, Hannes Meyer e Walter Gropius na Alemanha que vinham de outras áreas artísticas, enriquecendo claramente o carácter multi-disciplinar de Karel Teige.

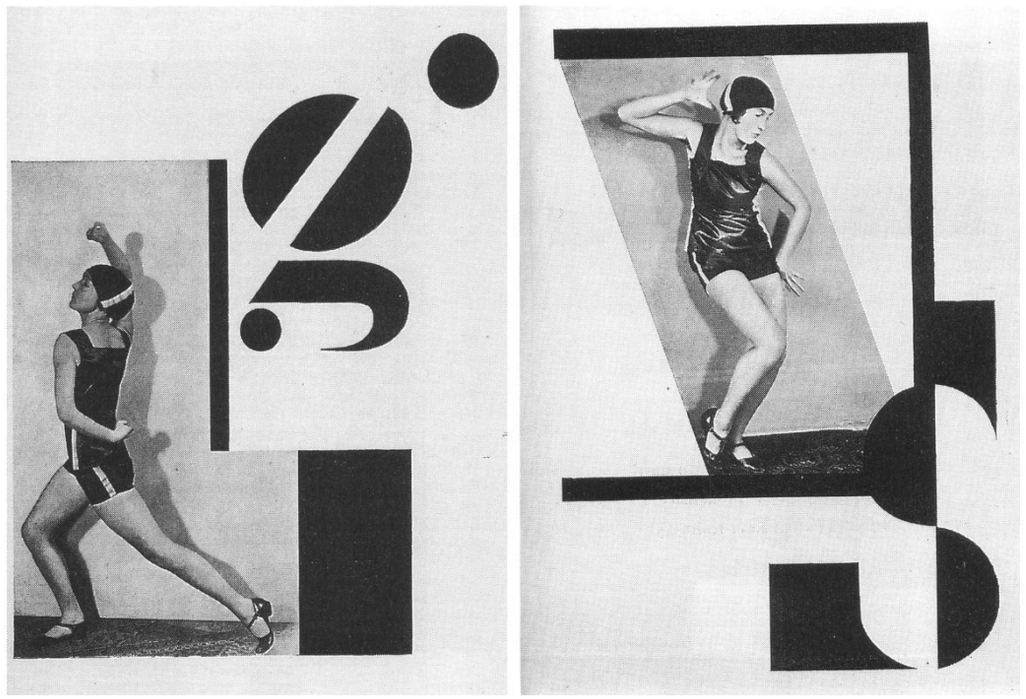
Refere Milan Kundera que "o homem caminha no nevoeiro" e questiona: "mas quem é mais cego? Mayakovsky que ao escrever o seu poema a Lenin não sabia onde o Leninismo levaria? Ou nós que o julgámos décadas depois e não vimos o nevoeiro que o envolvia?" (Kundera, 1995).

Karel Teige foi um homem que fugiu do comunismo, do marxismo e do fascismo. Essa independência de pensamento representou um rude golpe no seu percurso quando em 1948 o partido comunista tomou o poder na Checoslováquia. Karel Teige era visto como um progressista, não alinhando com o partido comunista, facto que o marginalizaria devido à imposição do realismo socialista e da amnésia cultural que se instalou depois da segunda guerra mundial.

É com o grupo Devětsil, (traduzido para português por Nove Forças) por si liderado, que emanam os primeiros conceitos teóricos de Karel Teige ao proclamar um novo poetismo do quotidiano. O conceito de poetismo presente nas imagens-poema produzidas pelo grupo durante os anos vinte evidenciavam um erotismo e um rigor estético particularmente importantes. O construtivismo continua a relacionar-se com este novo poetismo; como refere Kenneth Framton, recorrendo a Jaroslav Anděl, esta era uma "estética duplamente articulada que pretendia unir a poesia e a arte mas também a poesia com a arquitectura. Reflectindo um fascínio pela publicidade, turismo, desporto, e o cinema, Devětsil era um hino de louvor à nova cultura popular sintética, e é só na segunda metade dos anos vinte que Karel Teige se viria obrigado a descriminar entre a poética espiritual do quotidiano tal como estava representada na arte e os constrangimentos físicos da arquitectura construtivista" (Frampton, 1999: 5).

KAREL TEIGE E A APLICAÇÃO DA TIPOGRAFIA MODERNA

Se por um lado o trabalho de profunda renovação estética dos objectos impressos, através de uma nova atitude perante a tipografia, era naturalmente criticado pelos tipógrafos da altura, já a sociedade Checa culturalmente mais informada aceitava de forma aberta a tipografia moderna. Foram editoras como a Odeon que desbravaram o caminho da modernidade do desenho do livro e lançaram no mercado da Checoslováquia edições com capas de diferentes autores do grupo Devětsil. O novo livro era uma recomendação e não um olhar para o passado.



igura 1- Dois fragmentos das ilustrações tipográficas de Karel Teige para o livro Abeceda de Nezval

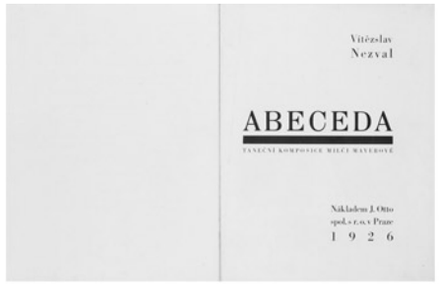
Mas o papel de Karel Teige no desenvolvimento da tipografia moderna iria mais longe quando em 1923 realiza um conjunto de ilustrações construtivistas para o livro Abeceda (Alfabeto) do poeta Nezval. A relação entre a tipografia e a fotografia enquanto valores emancipados e conjugados pelo Poetismo são explorados como nunca até aqui. O tipógrafo produz poesia tipográfica a partir da poesia convencional de Nezval, conforme Karel Teige afirma:

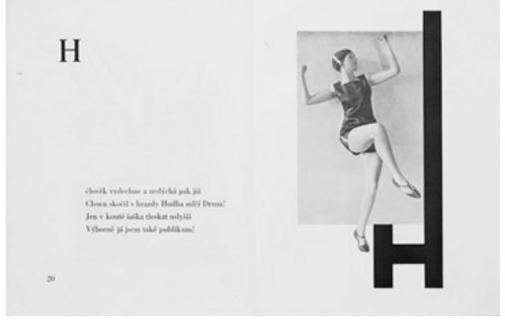
No livro de Nezval Abeceda , um ciclo de poemas baseados nas formas das letras, procurei criar um Tipofoto de uma natureza poética puramente abstracta, compondo em poesia gráfica o que Nezval tinha realizado em poesia verbal no seu verso, ambos sendo poemas evocam os sinais mágicos do alfabeto (Teige, 1999: 105).

São composições visuais, peças de poesia tipográfica e não ilustrações convencionais dos poemas. Diríamos que estamos perante um livro onde duas linguagens discorrerem paralelamente: a poesia convencional e a poesia tipográfica.

"A relação entre o grafismo e a imagem da sensualidade do corpo humano enquanto valores emancipados econjugados são explorados como nunca até aqui.

Cada composição é formada por uma fotografia de cada uma das coreografias criadas por Milca Mayerova e por uma estrutura visual que representa cada uma das letras do alfabeto. Estamos perante de um objecto experimental onde se podem constatar vários campos de acção artística: a dança moderna, tipografia, fotomontagem e interpretação de texto. A estrutura do livro é composta por uma estrofe de Nezval na página esquerda e pela composição de Karel Teige à direita, organizadas pela ordem das letras do alfabeto.





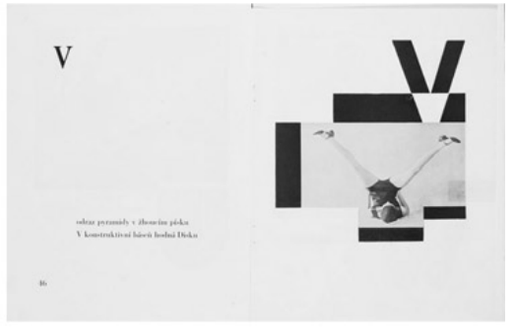


Figura 2
Livro Abeceda de Karel Teige numa visão estrutural das páginas esquerda e direita

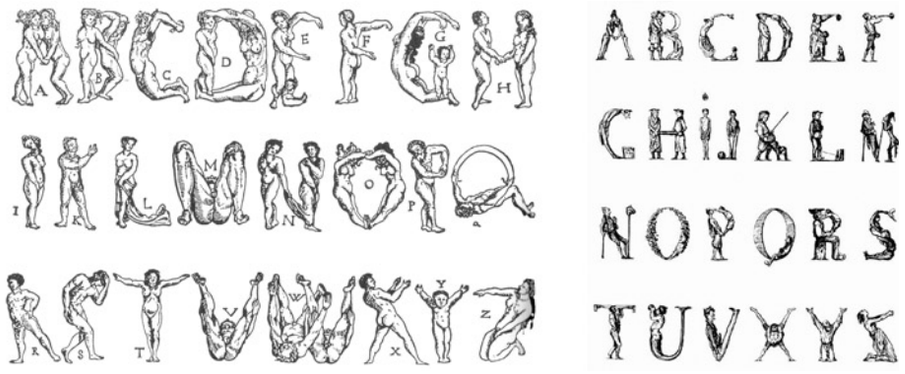


Figura 3 - Alfabeto de figuras nuas de Martin Weygel (Munique 1560) e Alfabeto Cómico de Honoré Daumier (França 1837)

Apesar de relativamente admirado Abeceda tem sido pouco examinado ou entendido e pouco foi publicado a seu respeito. Trata-se de uma peça fundamental no contexto do modernismo europeu, um verdadeiro trabalho colectivo que nasceu de um bailado com o mesmo nome onde a coreógrafa realizou uma versão de palco para os poemas de Nezval. A transfiguração do corpo em letra discorre de um processo formal sobre o qual é possível traçar alguns paralelos ao longo dos últimos cinco séculos. Como exemplo deste facto temos o alfabeto de imagens de Martin Weygel do século XVI.

Abeceda funde muitos dos conceitos do Poetismo: o erotismo das formas femininas, a ortogonalidade das formas tipográficas de Karel Teige, a engenharia e a industrialização do uniforme da bailarina. Enquanto obra seminal do Poetismo este livro é um trabalho de junção das artes e nesse sentido levando a teoria da ars una muito a fundo.

Tratando-se de um trabalho poético a legibilidade é sacrificada em prol de uma interpretação expressiva do material textual da poesia na página à esquerda. A letra surge transfigurada no traço de Karel Teige, fazendo dela uma forma abstracta que se afasta das convenções do código alfabético, expressando o cepticismo da avant-garde quanto à imposição do convencional na tipografia. Neste caso cada signo alfabético afasta-se da sua personalidade reprodutível para se anichar numa independência formal do sistema de signos do abecedário. A letra encontra-se numa dupla e paradoxal função de elemento de um código e elemento simbólico autónomo não reprodutível. Mayerova concorre também para uma visão paradoxal do alfabeto de Karel Teige. Na sua coreografia cada movimento capturado corresponde a um elemento de um novo código de notação para a dança. É importante constatar a influência do seu professor, Rudolf Von Laban que desenvolveu um sistema de notação que transcrevia os movimentos do corpo fazendo dele um alfabeto para a dança. Contudo as posições do corpo coreográfico de Mayerova não formam um alfabeto pois não são legíveis e fora do contexto do livro em que estão aplicadas não se interpretam neste sentido, diríamos, livresco.

Os poemas de Nezval foram inspirados no processo intelectual da motricidade humana ao absorver a poesia da letra enquanto objecto de grande imediatêz. O trabalho de Nezval apropria-se das letras do ponto de vista formal e do ponto vista simbólico como por exemplo a letra 'C' que é tratada poeticamente no seu texto como se ela fosse a lua; a letra 'A' como se fosse uma tenda de campismo. No caso da letra 'I', a estrofe de Nezval realiza um contraponto com a sua fisionomia minúscula. As alusões às viagens e a uma vida cosmopolita são constantes no poema: dos barcos a vapor na letra 'C', do arco e flecha em 'D', os telegrafistas em 'E', o palhaço em 'H', o engenheiro em 'L', a Torre Eiffel em 'Y', as acrobacias, as marchas, as onomatopeias (vrrrroooom) e o elogio do grupo Devětsil em 'R'.

Mayerova elabora a sua coreografia tendo em conta os poemas de Nezval. Se na maior parte das vezes nos parece que desenha a letra respectiva com o corpo procurando uma anatomia humana que espelhe esse mesmo desenho alfabético, como na letra 'S', outras vezes, como na letra 'H', Mayerova representa a respiração fonética que está associada a esta letra; Na letra 'G', a mais dinâmica de todas elas, a bailarina é uma toureira que responde ao texto de Nezval onde se evocam cowboys conduzindo o gado.

O trabalho fotográfico de Karel Paspa (fotógrafo) regista a pose que corresponde ao poema de Nezval, precedendo na sua constituição o elemento tipográfico realizado por Karel Teige.

Karel Teige realiza composições marcadamente diferentes entre a página da esquerda (onde respeita o texto para leitura linear) e a página da direita onde trabalha com os elementos à sua disposição: a fotografia da bailarina e os traços básico do esqueleto da letra. Nesta análise de conjunto Karel Teige realiza uma composição que gera diferentes sentidos poéticos entre o texto e a imagem da bailarina. A fotografia e a tipografia complementam-se continuamente.

Em 'A' o corpo da bailarina forma visualmente a letra 'A' completa, enquanto que o elemento tipográfico surge incompleto. A bailarina está em tensão e forte dinâmica,

em bicos de pés e de pescoço torcido (o 'A' tipográfico de Karel Teige é estático e monolítico). A lera 'B', é a segunda do alfabeto, estando dividida verticalmente em duas barras, constitui a imagem do peito da pessoa amada, estando as duas curvas da letra separadas. Mayerova combina um certo erotismo com o desenho corporal da letra 'B'. Noutras situações o corpo complementa a figura tipográfica como em 'E' onde a perna da bailarina desenha a linha central da letra.

A interacção entre Karel Teige e Mayerova é particularmente evidente quando na letra 'N' o corpo da bailarina é elemento de construção e união formal da letra. Nesta integração ou penetração tipográfica a figura entrelaça-se com a letra numa união sexual plena de emoção carnal. Num movimento cinético a bailarina de pernas abertas alia-se ao desenho da letra, nela se fundindo, enquanto elemento pertencente ao seu corpo tipográfico.

O trabalho tipográfico de Karel Teige e a sua interpenetração erótica e sensual com as fisionomias abstractas das vinte e seis letras deste livro podem ser contextualizadas dentro das interrogações de Roman Jakobson para quem a linguagem tinha uma função dupla: comunicativa e poética. Se a primeira correspondia ao sistema de sentidos, a segunda correspondia à forma e ao som.

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BIOGRAPHY

Master of Arts from the Royal College of Art, PhD in Communication Design from the University of Lisbon. Assistant Professor at the Faculty of Fine Arts where he founded and directs the MA in Contemporary Typographical and Editorial Practices. Has a dual activity as a designer and artist, is graphic and typographic design since 1996 in his own office; exposes design and make performance, performing solo exhibitions and has participated in several group exhibitions.

EL DESEO IMPOSIBLE DEL ARTÍSTA

María del Carmen Bellido-Márquez
Universidad de Granada. Spain

ABSTRACT

Desire is implicit in artistic creation, it is part of its cosmo-creativity and its genesis. The poetics of the object and artistic image transport the individual spectator into a magical lyricism, far away from its formal semantics, which serves as a communication vehicle to establish a dialogue with it, based on the symbolism and imagined desire that this produces in them, in combination with their feelings, desires, memories and emotions.
It shows that art reflects human desires and that the artist projects his concerns and desires in his works, releasing himself from apprehension of the spirit which compels the impossible or unattainable desire and allowing it to connect with the emotional genesis of the viewer, thanks to the semiotics of signs used in his works, which are interpreted by the intensity of viewing public, within a given society.

PALABRAS CLAVE
Arte, Deseo, Museo, Coleccionismo, Conservación

INTRODUCCIÓN

El deseo forma parte de la creación artística, de su cosmicidad y de su génesis. La poética del objeto y de la imagen transportan al individuo espectador a un lirismo mágico, alejado de su semántica formal, que le sirve de vehículo de comunicación para establecer con él un diálogo, basado en la simbología y en el deseo imaginado que éste engendra de ellos, en combinación con sus sentimientos, anhelos, recuerdos y emociones (Lomas, 1996: 10). De este modo el diseño del producto influye en la captación del interés del espectador, ya sea la obra un objeto de consumo o una pieza artística (Moraza, 2013: 16).
Si hablamos del árbol del deseo, estamos hablando del árbol de la ciencia, aquel que nos ofrece la sabiduría, la memoria y el conocimiento. Hablar bajo su sombra es beber de la sabia de nuestros mitos y nuestra identidad primigénia, en la búsqueda de nosotros mismos. Por ello, buscar al "otro" es buscarse a uno, pues no existe el "tú" sin el referente del "yo", y en él proyectamos nuestros deseos personales mediante los sueños, las aspiraciones, las esperanzas, las ilusiones o las promesas, para alcanzar la perfección del ser, a sabiendas de la imperfección de su naturaleza humana. Por ello, la imagen deseada no es fiel a lo que representa, dado que la imagen mental está idealizada y tiende a desvanecerse cuando se accede al objeto del deseo, dado que la materialidad física de éste no responde al ideal imaginado. El arte se convierte en un espejo que refleja la carencia del artista y su aspiración por dar forma física a lo que desea o quiere (Crespo, 2012: 1).

1. OBJETIVO

A lo largo de la historia los artistas han representado sus deseos de diversas formas, por lo que cabe preguntarse ¿Cuál es el deseo imposible del artista? Como respuesta analizamos las diferentes manifestaciones de los deseos humanos expresados por los artistas a lo largo de la historia, planteando como hipótesis el estudio del arte como vehículo de manifestación utilizado por los artistas para expresar sus deseos imposibles, los cuales se proyectan en el espectador como reflejo de sus propias aspiraciones imaginadas.

2. DESARROLLO

En el desarrollo del estudio se establecen una relación analítica entre diferentes aspectos del deseo estético, como variantes en la expresión artística, que puedan comprender las diversas utilizaciones del arte como vehículo para expresar el deseo del autor, en muchos casos imposible de materializar (González, 2002: 7).

2. 1. EL DESEO DE PERFECCIÓN HUMANA

Podemos ver que el deseo de perfección humana fue representado en el arte, desde la antigüedad clásica, por Policleto, con su obra Dorífero (450-440 a. C.) y en el Renacimiento por Leonardo Da Vinci, con el Hombre de Vitruvio (1490), llegando a la interpretación del canon humano de Le Courbusier con su sistema de proporción llamado El Modulor (1948-1953), aplicado a la arquitectura.
Por su parte Lucian Freud (Fig.1) puso el contrapunto a esta representación idealizada del ser humano y desarrolló un realismo crudo, que desveló la vulnerabilidad del cuerpo humano a través de su carnalidad, mediante figuras que no fueron hechas para buscar el parecido real sino la identidad psicológica del individuo (ABC.es, cultura, 2011).

ig. 1 - Freud Archive, Reflection (Self-portrait), 1985 © Lucian Freud. Disponible en: http://www.abc.es/20110920/cultura-arte/abci-lucien-freud-ultimo-trabajo-201109201235.html

También Ron Mueck, artista hiperrealista que proviene de la caracterización y los efectos especiales del cine, representa fielmente la figura humana, mediante siliconas y materiales varios, como pelo humano y lo hace, en ocasiones, con unas proporciones desmesuradamente grandes, para causar impresión en el espectador. Algunas de sus obras más conocidas son Dead Dad (papá muerto) (1996-1997) y Boy (2000) (Fig. 2).

Fig. 2 - Ron Mueck, Boy, 2000. Photo: Polfoto, Morten Overgaard/AP. Disponible en: http://gizmodo.com/first-off-quite-the-timely-response-only-15-months-la-1632785659

2.2. EL ÉXTASIS ESPIRITUAL, EL DESEO CONSUMADO Y ONÍRICO

También el amor místico fue representado por Gian Lorenzo Bernini en el Éxtasis de Santa Teresa, 1647-1651, mientras el mismo autor interpretó el deseo mítico del dios Apolo por la ninfa Dafne, que se convierte en árbol de laurel cuando éste la alcanza en su huida (Apolo y Dafne, 1622-1625).

Por otra parte, el deseo consumado fue representado por Rodin en El Beso (1887), plasmando en su obra la sensualidad y en La eterna primavera (circa 1884), en la que expresa mayor espontaneidad y apela a la permanencia del momento. Mas tarde, Brancusi representó El Beso (1908) con mayor rotundidad que Rodin, mientras Gustav Klimt lo hizo (El beso, 1907-1908) con sentido de entrega y sumisión de los amantes.

Fig. 3 - Robert Doisneau, El beso en la Place de l'Hotel de Ville, 1950. Disponible en: Robert http://lapiedradesisifo.com/2005/05/04/el-beso-en-la-place-de-l-hotel-de-ville-de-robert-doisneau/

El contrapunto al deseo consumado lo puso el fotógrafo Robert Doisneau, que realizó en 1950 la obra El beso en la Place de l'Hotel de Ville, en la que se representa a una joven pareja de enamorados que se dan un beso en medio de una muchedumbre de gente, frente al Ayuntamiento de París. Hoy día se sabe que esta no fue una toma fotográfica espontánea sino preparada, pero aún así representa la fuerza del amor, aquella que mueve el mundo y le da sentido a la vida. Esto demuestra el poder puede llegar a tener una imagen fotográfica (Ewing, 1999: 25). Con esta obra quedó simbolizado el ideal de París como ciudad romántica y del amor, que hoy día prevalece.

Por su parte, Dalí pintó El enigma del deseo - Mi madre, mi madre, mi madre (1929) (Fig. 4), como producto de su subconsciente y su irracionalidad onírica. El deseo onírico es una constante en las obras surrealista de Dalí, que analiza el deseo como fruto del proceso del delirio paranoico crítico, elemento que deriva en la interpretación y de la plasmación artística. La primera parte del título de la obra hace referencia al amor que sentía por su madre, a la que perdió siendo adolescente, en 1921. La segunda está extraída de un poema de Tristan Tzara, 'The Great Lament of My Darkness', que apareció en 1917.

Fig. 4 - Dalí. El enigma del deseo - Mi madre, mi madre, mi madre. 1929. Óleo lienzo. 110x150.7 cm.

Disponible en: http://catalogo.artium.org/dossieres/1/salvador-dali/obra/pintura

2.4. EL DESEO DE LO PERDIDO, ESPERADO O INALCANZABLE

Fig. 5
Oscar Kokoschka, La novia del viento / La tempestad, 1914. Óleo sobre tela. Disponible en: http://educacion.ufm.edu/oskar-kokoschka-la-novia-del

viento-oleo-sobre-tela-1914/

Oscar Kokoschka (1889-1963) pintó La novia del viento, conocida también como La tempestad (Fig. 5), como evocación al amor perdido y al deseo eterno. Se trata de una obra que representa la añoranza del amor de Kokoschka por su novia Alma Mahler, tras acabar su idilio amoroso, al que ella decidió poner fin y que él no aceptaba, llevándo esto al artista a la depresión. En la obra Kokoschka se retrata con aspecto de preocupación y con la mirada ausente y las manos entrecruzadas, mientras su amante duerme de forma plácida, abandonada a la inconsciencia. El cuadro fue pintado por el pintor cuando ya conocía el final de su romance. A partir del análisis de esta obra compartimos la afirmación de que el deseo nace del derrumbe del ser y de sus ganas de superación (Jacoby, 2011: 3).

En otra línea artística distinta, Gustav Klimt decoró las paredes del Palacio Stoclet (Viena) en 1905-1909. En él representó la esperanza del encuentro y la consumación del abrazo. A la derecha de la obra se escontra la espera, representada por una mujer de rasgo orientales que baila, a la izquierda está pintado el abrazo de los amantes, como ejemplo de la satisfacción. En medio se encuentra el árbol de la vida, enraizado en la tierra, que inunda todo el espacio restante con sus ramas de trazos arabescos, dando lugar a diferentes caminos y opciones por desarrollar. También está incluida en la obra la muerte en forma de pájaro negro.

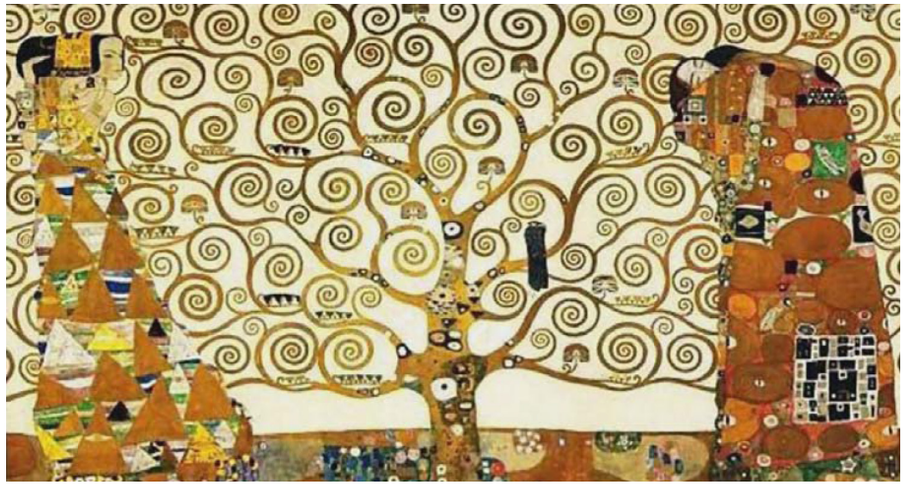

Fig. 6 - Gustav Klimt, El árbol de la espera, 1905-1909. Técnica mixta sobre papel, 193,5 x 121 cm. Viena, Österreichisches Museum für Angewandte Kunst.

Más tarde, Marcel Duchamp expuso el deseo de los solteros hacia la novia en el Gran vidrio (1915-1923) (Fig.7). Una obra formada por dos grandes paneles dobles de cristal, colocados uno sobre otro. En la parte superior la novia se desnuda y aparecen junto a ella la Vía Láctea y los pistones para la corriente de aire. Entre ambos paneles hay una barra de aluminio que separa los cristales superiores e inferiores. En esta última parte se encuentran los solteros, representados por sus uniformes: sacerdote, mensajero, coracero, gendarme, policía, jefe de estación, criado, repartidor y sepulturero; y junto a ellos hay un trineo, las aspas de unas tijeras, la rueda de un molino y un molinillo de café. Todo el conjunto recrea la maquinaria del amor. La obra posee un libro de instrucciones para su interpretación, escrito por Duchamp. En él explica que en la parte superior la novia se desnuda provocando la pasión de los solteros, y que este amor nunca se verá consumado dada la barrera que los separa.

Fig. 7
Marcel Duchamp, El Gran Vidrio,
1915-1923

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5. 2. DESEO DE ACCIÓN Y CAMBIO, EL ARTE PARA CAMBIAR EL MUNDO

Como aspiración por el cambio y el movimiento Giacometti esculpió L'Homme qui marche (El hombre que camina, 1961), una obra diseñada para ser instalada en la explanada del Chase Manhattan Plaza de Nueva York, que representa la acción del ser humano, la marcha continua del hombre hacia adelante, con la mirada fijada en la fuga de un horizonte que ha de alcanzar y al que nunca llegará. Un deseo de valorar la transcendencia del ser humano, representada con la imagen de un hombre descarnado que expone su existencialidad.

En la actualidad, el fotógrafo JR es un artista que trabaja instalando sus fotografías de gran formato en la calle, en lugares cargados de mensaje social. No quiere revelar su autentica identidad, y considera este espacio como la mayor "galería del mundo". Se define como "artivista", una mezcla entre artista y activista. Toma fotografías de personas y luego las convierte en imágenes gigantes, que coloca en lugares significativos de las ciudades como muros o techos, con la ayuda de voluntarios que participan en la acción, y esto hace que el mundo sea visto de manera diferente. Se trata de un arte para mejorar el mundo.

En el año 2006 JR trabajó en el proyecto Retrato de una generación con fotos de dirigentes de bandas locales de París, colocadas en las fachadas de un barrio burgués, esta acción fue considerada ilegal pero después la obra se expuso en la fachada del Ayuntamiento de la ciudad. En 2007 trabajó en el proyecto Face 2 face con retratos colocados en el muro que separa Palestina e Israel. En 2008 desarrolló su trabajo en Bangladesh, Sierra-Leona y Río de Janeiro. Igualmente en 2014 trabaja en la Ellis Island (New York).

En 2010 JR recibido el premio TED, dotado con 100.000 dólares norteamericano. Este premio ha recaído en otras ocasiones en el cantante Bono, del grupo musical U2 o el ex presidente norteamericano Bill Clinton. TED (una organización sin ánimo de lucro) premia a las personas conocidas por sus "deseos de cambiar el mundo". Los ganadores del galardón pueden pedir un "deseo" al que el equipo de TED destina sus recursos e influencias para realizar alguna ayuda humanitaria o social.

Fig. 8 - Obra del fotógrafo francés, JR

JR manifestó lo que quiere hacer con este premio: "Deseo que os levantéis por lo que realmente os importa participando en un proyecto de arte global y que juntos podamos darle la vuelta al mundo como a un guante". Con ello puso en práctica un proyecto colaborativo global, titulado Inside out Project (http://www.insideoutproject.net/), en el que cualquiera puede, siempre con el propósito de denunciar situaciones o hechos deplorables y de contribuir a crear un mundo mejor (Cultura.El país, 2011: 1).

3. CONCLUSIONES

Desde el análisis de esta breve revisión artística se considera que el arte refleja los deseos humanos, y que el artista proyecta en sus obras sus inquietudes y anhelos, liberándose del apresamiento del espíritu al que obliga el deseo imposible o inalcanzable y consiguiendo conectar con la génesis emocional del espectador, gracias al significado de los signos y a su interpretación en una sociedad determinada.
Las representaciones del deseo son múltiples y variadas como lo es la naturaleza humana, sus sentimientos y necesidades. Liberada la obra de arte de la necesidad de la representación real y convertida en una creación con motivación y existencia propia, no por ello ha dejado de ser utilizada para expresar los deseos más innatos y representativos del ser humano, por lo que el diseño de la imagen y su representación

creativa ha estado al servicio de la expresión del deseo del ser humano desde tiempos antiguos a la actualidad.

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PLENITUD DE LA EXPERIENCIA EN EL DISEÑO EDITORIAL. UN ANÁLISIS DESDE LA COMUNICACIÓN ANALÓGICA Y DIGITAL EN FUNCIÓN DEL GRADO DE INTERACCIÓN ENTRE LA ORGANIZACIÓN Y LAS PERSONAS

José Rafael González, Carlos Dussan,
Pablo Gómez
Pontificia Universidad Javeriana Cali. Colombia

ABSTRACT

The study raises the analysis of communication processes in which is immersed editorial design, in fields characterized by a growing and increasingly diverse offer, new ways of conceiving innovation among those who make value propositions and the users or consumers of those products, both tangible and intangible. In this context, design trends are evaluated from the notions of analog and digital, for the purpose of providing basic and key insights which contribute to the characterization of the qualities of the phenomenon, in the light of the challenges posed by the dynamics such as the approach to these concepts from the fullness and the experience of use or consumption of editorial products in the framework of the evolutionary aspects of communication, co-creation, ubiquity, interaction and joint construction of content, as well as technological democratization in the terms proposed

by Von Hippel (2005) and to a significant extent already visualized by McLuhan when analyzing the development of new media when he mentioned "the transformation of the hardware in software; constant disruptive change displacing the linear progression and the stable sense in situational perspectives; drastic changes in the perception of time and dissolution of a considerable number of geographical boundaries" (Islas, 2012).
An analysis from the emotional dimension and the fullness of use of editorial products from the real consideration of desires, aspirations and deep motivations, based on the approach of González (2013) is proposed, in which the intensity of user experience is correlated with multidimensional communication (interactive, dynamic and multimodal) and not one-dimensional (unidirectional, static and mono-modal), and in which by similarity, analog media generates a linear, continuous, unidirectional narrative experience, while digital ones allow more dynamic situations that favor interaction.
Thus, from the perspective of analog and digital, in this research the processes of value creation between organizations and individuals are explored through the concepts of fullness and intensity of user experience around editorial products, in indivisible relation with interactivity and with the evolutionary aspects of communication practices that make it possible; attuned to the demands, motivations and desires of new types of users and consumers, much more informed and connected, agile and fast, where not only rational / functional aspects count, but the affective ones related with emotional processes of value creation, in the terms proposed by Bedoya & Gil (2004) or Noble & Kumar (2008), as a starting point for assessing the differentiation of the product/service offer. These principles are key, considering asseverations of authors like Verganti (2009) who argues that "people do not buy products but meanings. People use things for profound emotional, psychological and socio-cultural reasons, besides the utilitarian", and from this statement could be conceived today the dimension of desire, fullness and motivations of users, around editorial design.
In addition, the technological resources that support these schemes, permeate society faster, by being accessible to more people in shorter transit times and coming down in price rapidly, allowing mass access to new media, channels, codes and practices, without almost limitations. Nowadays one no longer acquires an editorial static product, but multiple configurable resources in their context, that can also be continuously enriched and customized, with which it is feasible to continue interacting over time, because it is complemented, upgraded and transformed along with and by the user. If keys are known to manage design processes and innovation immersed in these dynamics, it is possible to portend better editorial products and services, in full awareness of the potential of focusing on the desires, motivations and real needs of people.

KEYWORDS
Interaction Design, Editorial Design, Analog & Digital Design, Communication Design, User Experience.

INTRODUCCIÓN

Los puntos de encuentro o touch points entre las organizaciones y las personas a través de productos y servicios de diseño editorial, son cada vez más enérgicos y se caracterizan hoy en día por estar inmersos en dinámicas de creciente interactividad, de co-creación y de construcción conjunta de contenidos en el marco de nuevas mecánicas sociales, culturales y tecnológicas, en donde estas posibilidades son claves para abordar la competitividad, el desarrollo de estrategias para la diferenciación, la toma de decisiones en torno a diseño y comunicación.
Esos puntos de contacto trascienden cada vez más la temporalidad, las barreras geográficas y al propio producto como hecho físico y tangible en un primer nivel, para recrearse en un segundo nivel signado por lo relacional, lo contextual y lo conativo, según los planteamientos de Watzlawick et al. (1985) y González (2013), que se caracteriza por ser mucho más interactivo, atemporal y pleno de componentes de intangibilidad y ubicuidad. Así, mientras el hecho físico de primer nivel puede ser limitado y finito (una revista, un periódico, un folleto impreso), el nivel digital (Rothmann & Koch, 2014), contextual de segundo orden puede resultar ilimitado y cambiante, configurable y personalizable, como sucede cuando se profundiza en la exploración del mundo de contenidos que giran alrededor de un mensaje simple, al traspasar un umbral a través de la lectura óptica de un código QR (figura 1) con un Smartphone, hacia una dimensión virtual pregnada de temas adicionales, canales y modos, sobre los que es posible intervenir, configurar, y tomar decisiones como usuario, enriqueciendo así el proceso de comunicación entre la organización que propone la oferta de valor y la persona que disfruta de una experiencia más completa. En esta dinámica, como afirman Vargo, et al. (2008), "es previsible concebir roles y formatos participativos a partir de los cuales muchas organizaciones fundamentan hoy su accionar, ideando estrategias en las que el usuario es siempre un co-creador de valor" (pág. 148).

diseño de comunicación visual

Figura 1 - Código QR para acceder a un portal web

Según Desmet (2008), percibir el producto en esa primera instancia o nivel, es decir, ver, tocar, escuchar y oler el objeto, puede ser un fuerte estímulo emocional, pero el mismo autor sostiene que "el sistema emocional de un producto no es estático, sino dinámico e interactivo" (pág. 395), con lo cual, si bien el hecho físico es fundamental porque en muchos casos constituye la primera aproximación al producto, también está el hecho de que para poder abordar los conceptos de dinamismo e interactividad no es posible restringirse en la actualidad a una sola dimensión. Comenzamos así a toparnos con nociones opuestas y/o complementarias como lo son: lo impreso/virtual, lo estático/dinámico, o lo tangible/intangible en el espacio de lo analógico/digital.

Así, desde la mirada de lo analógico y lo digital, en esta investigación se exploran los procesos de creación de valor entre las organizaciones y las personas a través de los conceptos de plenitud e intensidad de experiencia de uso o consumo de productos editoriales (figura 2), en indivisible relación con la interactividad y con los aspectos evolutivos de las prácticas de la comunicación que la hacen posible; a tono con las demandas, motivaciones y deseos de nuevos tipos de usuarios y consumidores, mucho más informados y conectados, ágiles y veloces, donde ya no cuentan solo los aspectos racionales/ funcionales, sino los afectivos relacionados con procesos de creación de valor emocional en los términos planteados por Bedoya & Gil (2004) o Noble & Kumar (2008), como punto de partida para evaluar la diferenciación. En adición, como sostiene Von Hippel (2005), los recursos tecnológicos que soportan estos esquemas, experimentan un proceso de democratización y permean cada vez más rápidamente a la sociedad, poniéndose al alcance de más personas en tránsitos temporales más breves y bajando de precio de forma acelerada, lo que permite el acceso masivo a nuevos medios, canales, códigos y prácticas sin apenas limitaciones.

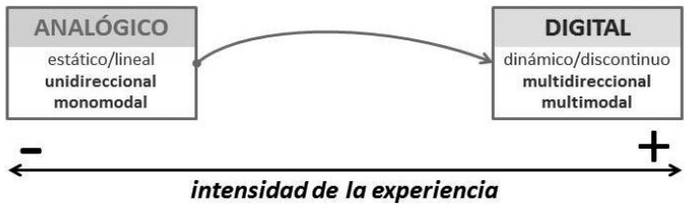

Figura 2 - Plenitud e intensidad de la experiencia en la dualidad analógico/digital

Surge por tanto la necesidad de tener una claridad sobre los elementos caracterizadores del fenómeno y los touch points entre las organizaciones y las personas, sobre sus cualidades y atributos, para poder orientar procesos de análisis en torno a preguntas como: ¿Cuándo emplear recursos analógicos?, ¿Cuándo optar por un formato digital? o ¿Cuándo optar por un formato mixto analógico-digital?, ¿Cómo abordar la interacción con las personas desde estas dinámicas en el diseño editorial?

EL CONTEXTO ACTUAL DE LOS PROCESOS DE COMUNICACIÓN Y SUS EFECTOS EN EL DISEÑO.

El diseño editorial se encuentra inmerso en procesos de comunicación, que se dan en contextos caracterizados por una oferta cada vez más creciente y diversa y por las nuevas maneras de concebir la innovación entre quienes proponen la oferta de valor y los usuarios o consumidores de éstos productos, tanto tangibles como intangibles. En este contexto, se evalúan tendencias de diseño desde las nociones de lo analógico y lo digital, a los fines de proveer insigths fundamentales y claves que coadyuven en la caracterización de las cualidades del fenómeno, a la luz de los retos que imponen dinámicas como la aproximación a estos conceptos desde la plenitud y la experiencia de uso o consumo de productos editoriales en el marco de los aspectos evolutivos de la comunicación, de la co-creación, de la ubicuidad, de la interacción y de la construcción conjunta de contenidos, así como de la democratización tecnológica (Von Hippel, 2005) y en buena medida visualizados ya por McLuhan al analizar el desarrollo de nuevos medios de comunicación cuando hacía mención a "la transformación del hardware en software; el constante cambio disruptivo desplazando a la progresión lineal y el sentido estable en la perspectiva situacional; drásticos cambios en la percepción del tiempo y la disolución de un considerable número de fronteras geográficas" (Islas, 2012). De igual manera y subsecuentemente, las previsiones de Coyle et al. (2002), en relación con los efectos emocionales favorables de la interactividad hace un poco más de una década, se ha potenciado actualmente gracias al desarrollo de las telecomunicaciones, Internet, el ancho de banda y demás tecnologías involucradas en la transmisión digital de datos.

PLENITUD DE LA EXPERIENCIA. BASES CONCEPTUALES DESDE UNA PERSPECTIVA EVOLUTIVA.

Para enfocar el estudio alrededor de las dinámicas que se generan con los medios y soportes analógicos y digitales, en donde lo primeros se asocian con una experiencia narrativa lineal, continua, unidireccional y los digitales con situaciones más activas y participativas que favorecen la interacción, se plantea una mirada desde las

emociones y la plenitud de uso de los productos con base en la consideración real de deseos, anhelos, aspiraciones y motivaciones profundas, a partir del modelo para el estudio del diseño impulsado por la experiencia de González (2013), en el que se correlacionan los conceptos de intensidad de experiencia de uso, con aspectos de la comunicación. Este modelo se sustenta en dos premisas fundamentales: la primera sostiene que en la medida en que la comunicación sea más completa e integral, más intensa y plena será la experiencia del usuario. La segunda plantea que la experiencia puede ser evaluada en términos de su intensidad, así, una comunicación potenciada puede coadyuvar en la vivencia de una experiencia más plena, mientras que una comunicación escasa puede atenuar su intensidad (figura 3).

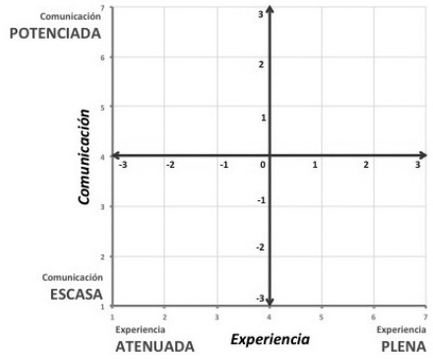

Figura 3
Contexto para la evaluación de relación entre comunicación y experiencia de usuario. Fuente: (González, 2013).

Para ello, González (2013) propone un escenario en el que interactúan tres agentes: la organización-empresa, el usuario-consumidor y la interfase (espacio entre las fases) donde se solapan y actúan ambos elementos, en el que se lleva a cabo la comunicación, y que representa igualmente la zona donde se construyen las experiencias, como señalan Sanders & Dandavate (1999) en su planteamiento de experiencia de usuario (figura 4).

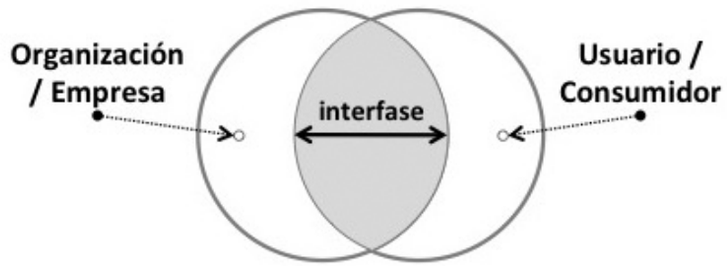

Figura 4 - Interacción de tres agentes: organización-empresa, usuario-consumidor e interfase. Fuente: (González, 2013).

A partir de las premisas mencionadas y del escenario de interacción entre los tres agentes, González (2013) formula el modelo que sirve como marco para este trabajo. Incluye el estudio del sistema de referencia del modelo conceptual que se plantea para el análisis del fenómeno de la experiencia y la comunicación, el cual está relacionado con las fuerzas que impelen la experiencia, es decir, con los impulsores que filtran las acciones de diseño y la potencian, representados en la Diferenciación, la Configuración y la Emoción. Lo relativo a Diferenciación, se emplaza del lado de la empresa y la Configuración (Interacción/Co-creación/Personalización), en el espacio donde convergen la empresa y el consumidor, mientras que la Emoción se presenta más asociada con el usuario/consumidor, por su relación con sus aspectos sensoriales, cognitivos, afectivos y conductuales, de acuerdo con planteamientos como los de Crilly et al. (2008) y Blackston (1992), citado por Heath et al. (2006, pág. 142). En este sentido, los aspectos relacionados con motivaciones profundas, deseos y anhelos, se ven reflejados en el impulsor emoción, pero éstos dependen a su vez del grado de interacción que se tenga con la oferta de valor de la empresa (impulsor diferenciación) y de las posibilidades de operar en el espacio de interacción (impulsor configuración) para construir la experiencia, y aquí coexisten los diferentes canales, plataformas, medios, modos, prácticas y recursos que operan –o no- por ejemplo, sobre los principios de los nuevos medios (Manovich, 2002): representación numérica, modularidad, automatización, variabilidad y transcodificación (figura 5). En este contexto, el diseño se convierte en un elemento de mediación y no un producto acabado.

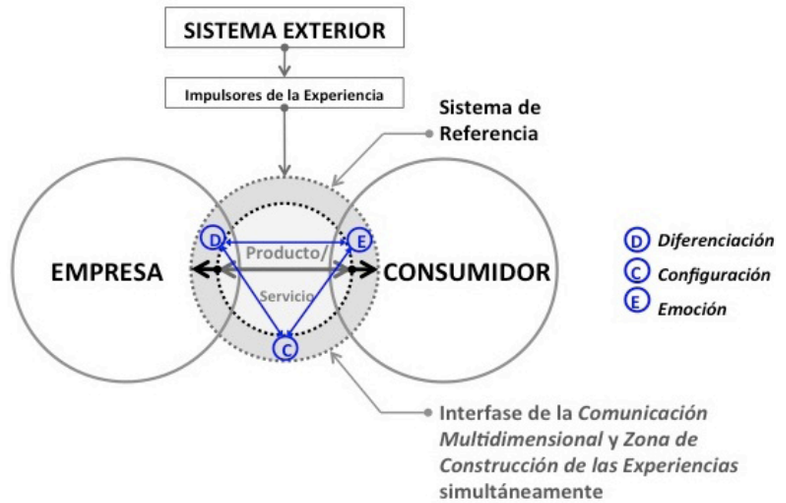

Figura 5 - Diferenciación, Configuración y Emoción, impulsores del diseño en la zona de construcción de las experiencias. Fuente: (González, 2013).

En este modelo, en línea con el pensamiento de Ramaswamy (2009), "las empresas dejan de pensar en los individuos como meros receptores pasivos de valor, a quienes tradicionalmente ellas les han suministrado bienes, servicios y experiencias" (pág. 11). El modelo de González (2013) se articula con otros modelos como el de la progresión de valor económico de Pine II & Gilmore (2000) para apoyar los procesos de exploración relativos a la diferenciación, la personalización y la relevancia de las necesidades de los consumidores en términos emocionales, y resulta de utilidad para su aplicación en múltiples ámbitos de comunicación en diseño editorial, incluyendo temáticas tan amplias como la literatura en diversos formatos y para diferentes grupos etarios: niños, adultos o mayores, pasando por cultura y ocio o publicidad (Øiestad & Buegge, 2014).

LO ANALÓGICO Y DIGITAL EN EL DISEÑO EDITORIAL.

Las implicaciones del estudio, hacen que al propio tiempo se reevalúen conceptos como el de nativo digital, y se propongan nuevas fórmulas en las que se incluyan las posibilidades y las potencialidades tecnológicas de circunstancias determinadas de la historia que marcaron el contexto, y que hicieron a las personas tener acceso a unos determinados productos más analógicos en un momento y más digitales ahora, pero desde afirmaciones como las de Cleomar Rocha, director del Media Lab de la Universidad Federal de Goiás en Brasil, quién sostiene que "no es que nuestro pensamiento será digital, siempre fue digital, lo que estamos haciendo ahora es reconociendo su potencial" (Rocha, 2014), lo cual es vital para definir estrategias de comunicación e innovación y diferenciación en la actualidad. Para ello, Rocha erige un paralelismo entre las conexiones sinápticas del cerebro, que no son lineales sino multidireccionales, y en las que se establecen asociaciones múltiples en diferentes dimensiones y niveles de pensamiento simultáneamente. Esta característica de discontinuidad del pensamiento, provee posibilidades de procesamiento mucho mayores que las una visión de pensamiento como hecho continuo y lineal. En ese sentido, estas afirmaciones permiten la redefinición de conceptos como el de nativos digitales, en favor de otros como el de nativos en contextos digitales, nativos en contextos analógicos y quizá un tercer concepto para la generación nacida en el umbral intermedio, en un mundo en el que "es innegable el rol que están desempeñando las comunicaciones en la construcción de nuevas perspectivas socio-culturales, de negocio y de relaciones interpersonales, sin que para ello existan limataciones de distancias, tiempo y espacio", como destaca Etchevers (2006). En el análisis de este contexto desde una perspectiva evolutiva, se revisan los aportes de autores como Otl Aicher (1978), quién se encuentra entre los primeros referentes que abordaron el debate desde de la representación en el texto

Analógico y Digital, concediendo en ese momento una gran importancia a la imagen y al texto analógico. A la luz de la evolución de estos conceptos, autores como Jin (2013), llaman la atención sobre las características dinámicas e interactivas del texto digital, diferenciadas del texto impreso, que deben ser tenidas en cuenta durante el diseño visual en planteamientos que apunten a mejorar los procesos de comunicación y diferenciación y por otra parte, Mod (2011), destaca los cambios en el sistema pre-artefacto, del artefacto y post-artefacto alrededor del futuro del libro, por cuanto los touch points entre organizaciones y personas cambian debido a que, entre otras causas, la línea entre el editor y el escritor se difumina, los tiempos de producción se minimizan, pero sobre todo debido a su mutabilidad.

Para ello, se hace evidente la necesidad de caracterizar el fenómeno de lo analógico y lo digital en el diseño editorial, el cual contemple exploraciones alrededor de mensajes y de propuestas de valor a través de variaciones en medios, canales y modos, incluyendo la medición tanto de la dimensión racional (comprensión), como de la dimensión emocional (plenitud, disfrute y deseo). Cabría reflexionar con cierto tipo de contextos, situaciones y contenidos, en términos de la pertinencia y del rol de distintintos recursos comunicacionales: el texto impreso sin imagen por ejemplo, la infografía, la gráfica animada/motion graphics (Lowe & Boucheix, 2011) o (Noiwan & Norcio, 2006), y la realidad aumentada (Berg, Kojo, & Laarni, 2010) entre otros, en función del grado de interacción que se puede experimentar con cada uno (figura 6).

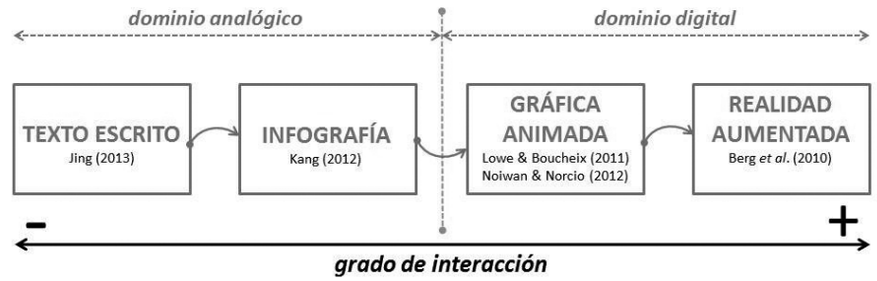

Figura 6 - Exploración de diferentes dimensiones del mensaje sobre cuatro recursos

REFLEXIONES FINALES

Una de las claves del fenómeno parece encontrarse a día de hoy en el concepto de interacción dinámica en términos del planteamiento del diseño partiendo de la dualidad entre lo analógico y lo digital, como punto de referencia para decidir cuándo utilizar uno u otro recurso como medio para la diferenciación funcional o como vehículo para la creación de valor emocional. Como afirman Kress et al. (2001), "los modos de comunicación evolucionan y cambian en respuesta a las necesidades de comunicación de la sociedad, nuevos modos son creados y los modos existentes transformados" y esto es fundamental para entender el diseño editorial en las dinámicas sociales y culturales en la actualidad en donde el diseño se concibe como elemento vehicular de los procesos de mediación entre las organizaciones y las personas, ampliando las posibilidades de canalizar sus deseos y motivaciones, en favor de experiencias mas plenas y memorables.

Por último, en este marco la tecnología es un catalizador de los procesos y aunque el diseño editorial coexista en sus formas analógica y digital, lo digital permea cada vez más el campo editorial en general y la tecnología es un pilar fundamental en todo ello.

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MULTIMEDIA

MULTIMÉDIA

VISUAL ARCHIVES: NEW INFOGRAPHIC INTERFACES

Marta Fernandes
ESEIG/IPP, CIAUD e ID+
Bruno Giesteira
FBAUP
Alexandra Ai Quintas
FA-UL, CIAUD

ABSTRACT

The present article is part of a broader study that frames the concept and creation of visual archives for online press, in relation to infographics. In addition to being an operative discipline, Design presents itself as a theoretical response, through the analysis of conditioning in society and the anticipation of new communication processes.
By presenting and promoting a practical and theoretical investigation on infographics, we intend to reveal how we can communicate complex information content visually.
Focusing on online press infographics, we propose to establish a new role by relating it to visual archives.
We will present selected case studies to focus on the possibilities of retrieval and presentation of past and present data, thus connecting a definition of visual archives with new paths for online dynamic infography.
Interface presents itself as an invisible aspect that interfuses the final outcome, and reveals infographics as a response that bonds technology and visual practice

KEYWORDS
Visual Archives, Infography, New Media, Interface, Visual Literacy

1. INTRODUCTION

The present article proposes to frame the concept and creation of visual archives for online press, in relation to infographics.

It is a research within the areas of design, visual literacy and, in particular, infographics, where we discuss how we communicate visually. Focusing on online press infographics, we proposed to begin a discussion about specific types of news where infographics and visual archives can find common ground.

We move into a new paradigm, where we abandon a period of automation of processes – a feature present since the Industrial Revolution – and walk towards an automation of information. One of the consequences is the need for greater clarity and progressive information systematization when we are in the presence of the multiplicity of data to which we have access. In the age of "information overload" (TOFLER, 1970) we can say that the abundance of information and how we organize it is, above all, a problem of Design and, in particular, of Information Visualization.

2. KNOWLEDGE AND ARCHIVE

As an initial premise, we question how archives and knowledge are structured and created.
Theoretically we explain the acquisition of wisdom following, a sequential model: Data > Information > Knowledge > Wisdom (DIKW) (Fig. 1). This operative model calls upon itself certain types of logic, where data is presented in a linear sequence, like the information we find in books. However, something different occurs when we are confronted by the diversity of sources available online.

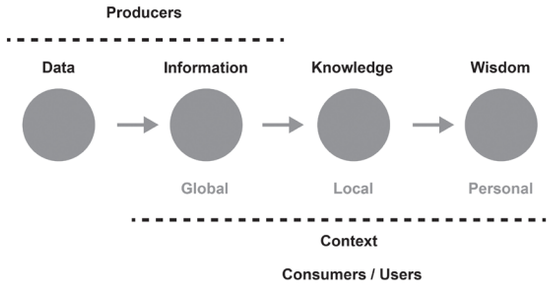

Fig. 1 – Knowledge Spectrum. Adapted from Nathan Shedroff (2000).

The constant presence and accessibility does not make data easier to locate. Database search presents disperse and decentralized references in various sources, without a hierarchical order (fig.2).

As the amount of information increases, our ability to distinguish and attribute meaning decreases reciprocally.
This is made visible by:

- A new paradigm, recognized when our foundations of DIKW are shaken (WEINBERGER, 2006).

- An orderly logic, in post-modern era, and especially with the apogee of the Internet, increasingly frail. Diversity, interaction and information through private options is privileged.

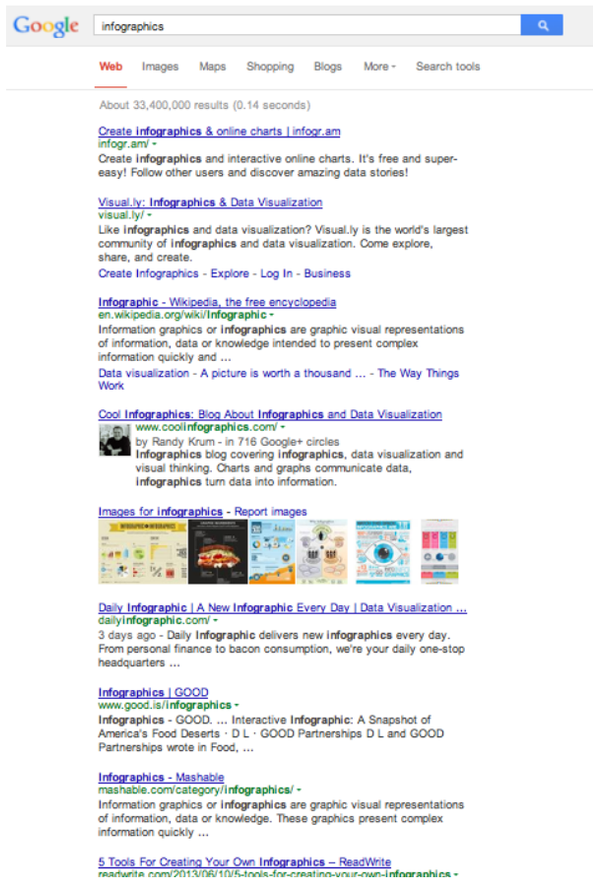

Fig. 2 – www.google.com. Search for the term Infographic.

Still we cannot invalidate that:
- The dynamics of classification, connection and relation to data are essential to the caption of content and meaning. The logic to acquire knowledge is not necessarily altered, but the means available are.
- Producers and Users become active pieces in the "management and creation of new knowledge: they classify, connect, comment, correct, edit" (QUAGGIOTTO, 2008). We can go further and add that they store and archive, since the human condition has a latent need to register and store diverse types of data for posterity.

2.1. DEFINITION

Following what is stated above, archives can be considered "a place to systematically record, sort and manage documents, images and media for permanent preservation" (SCHULLER, 2009). This methodical and professional information retrieval is usually performed by a group, society or nation and often influenced by "economic and political interests, and presented as a social act in our changing society"(SCHULLER, 2009).
In the interests of preserving contents and data over time, there are currently several archives involved in digitizing their information. Governments have released their budget decisions online, as is the case of Data.Gov.uk in the United Kingdom (Fig. 3).

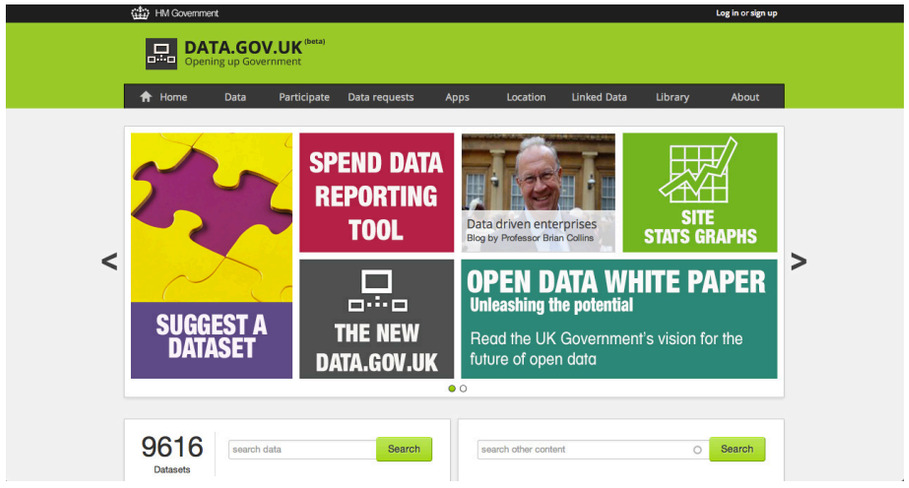

Fig. 3 – www.data.gov.uk. Website that presents UK's government budget decisions.

These online Databases and Archives allow access and reveal our need to preserve data, but it is usually presented in the form of text and/or datasets . Again, data is always present, but reading and translating what is given constitutes a difficulty. They are normally accessible only to experts who know how to transform and interpret.
It is necessary to create languages that translate it into more readable formats. In that respect, the interface plays a vital role.

3. INTERFACE

Although usually linked to computer science, the term interface can be seen as much more, as the ground base of the design process. Interface is not seen as a material object, but "the dimension of interaction between the body, tool and purposed action." (BONSIEPE, 1999:29)

It allows data to be transformed into information, and reflect the need for understanding and connection by the user. The design of the interface "reveals the character of objects as tools and the information contained in data." (BONSIEPE, 1999: 29).

4. INFORMATION VISUALIZATION

It is essential that new models appear.
It is common to hear that we live in a visual culture, and received our information from images, due to a long and steady textual heritage. It is not common to see it taken as a form of literacy, in other words, information conveyed "through images as well as texts and numbers" (ELKINS, 2008).
Information Design represents visual data with the intent to "communicate, document and preserve knowledge. It deals with making entire sets of facts and their interrelations comprehensible, with the objective of creating transparency and eliminating uncertainty" (SCHULLER, 2009).
The information visualization is a visible response, a new medium and "new scale that is introduced into our affairs by each extension of ourselves, or by any new technology" (MCLUHAN, 2001).

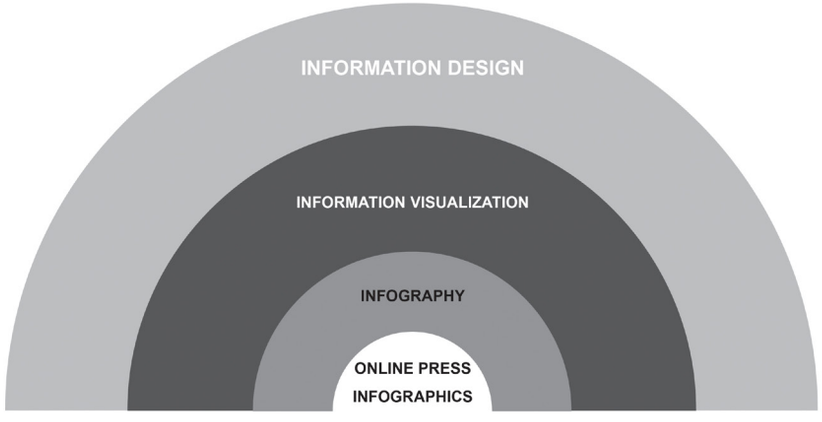

Fig. 4 – Dynamic relation between Information Design and Infographics for online news. Adapted from Alberto Cairo (2008).

The fields of information and infography (Fig. 4) constitute a multidisciplinary aggregation and a growing discipline. The power of infography is to transform data into knowledge and to access it visually.

5. ONLINE PRESS INFOGRAPHICS

So how can archives prevail in the context of infographics? It is assumed that they do so by becoming visual. The notion of archive that is proposed here is compatible with Cairo's vision (2008) of an analytical conception of information stating that, an infographic is based on the revelation of complex data through visual structures. In comparison (Table 1) we can perceive how archives and Infographics relate to each other.

Archives	Online Press Infographics
Historical	Historical
Sociological	Sociological
Political	Political
Information	Information
Recognize Value of Content	Recognize Value of Content
	Complex data through visual structures (CAIRO, 2008)
	Tool of interaction and exploration (CAIRO, 2008)
	Hidden realities become visible

Table 1. Comparison between Archive and Online Press Infographics.

5.1. AIM AND EXPECTED RESULTS

News infographics is assumed, not as a tendency to degrade or merely decorate data, but as a guaranty of a "structure so that patterns and hidden realities become visible" (CAIRO, 2008).
Pattern design, in this respect, should not be seen as a finite system, but a living structure in constant evolution, that reflects on the "organization of graphic elements according to the relation between data and function" (BERTIN, 2011). This search, widely disseminated, is expressed by Chaomei Chen, who indicates that a "the taxonomy of information visualization is needed so that designers can select appropriate techniques to meet given requirements" (CHEN, 2006).
All these points connect on our proposed analysis. It has allowed to link specific types of infographics, specifically those with recurrence and online presence. It deals one elements that potentially increases dynamic and allows it to be linked to archives. That element is TIME. Recurrent news such as Elections, Olympic Games, Nobel Prizes, are presented in many forms of online infographics, with scarce continuity. They are made as isolated pieces of work, and past information within a topic is not reactivated and availed. A continuum of information is lost.

5.2. PÚBLICO ONLINE: P3

A collaboration has begun, with P3, an online newspaper oriented to a 18-35 year old demographics, and we propose to build a prototype. To create dynamic infographics with a lexicon of visual models that can be called upon when recurrent news are needed.
Take the examples given below (Fig. 5-8) focusing on elections. Past information is considered but the structure is not conceived for continuity. Our aim is to discuss possibilities of retrieval within topics and reveal past data, thus connecting the presented definition of visual archives as a new path for online newspaper infographics.

5.3. CASE STUDIES

The election of Barack Obama in 2008 and 2012 are examples of how information can be retrieved and adapted. If we look close, there are more correlations in 2008 (Fig. 5, 6). The map vision can compare results from 1992 onwards. In 2012 (Fig. 7) that ceases to occur; the map presents the 2012 outcome and a 2008 fluctuation analyses (Fig. 8).

There is no similar visual comparison of results. The overall visual structure is similar on both, a positive point, but part of the information available in 2008, did not meet continuity.

Fig. 5 – New York Times. Presidential results of the 2008 Elections in the United States.

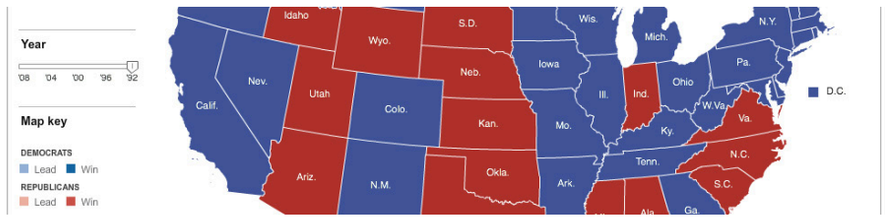

Fig. 6 – Detail.

Fig. 7 – New York Times. Presidential results of the 2012 Elections in the United States.

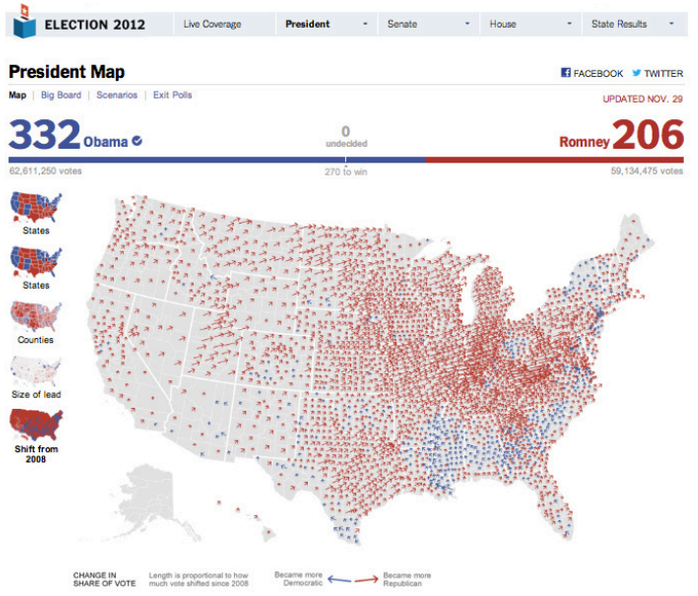

Fig. 8 – New York Times. Change in votes from 2008 to 2012 Presidential Elections in the United States.

The design and information quality presented in the case studies are not at stake. They are reliable infographic visions of the reality of that moment. They are taken into analyses for being recurrent news that offer the possibility of a new approach on the continuity of design and information. They present an aspect proposed with a visual lexicon: Continuity. With any given design object, continuity and familiarity with graphic elements allow quick understanding of the information conveyed.

6. CONCLUSION

The research implies that it is necessary to create visual devices that deal with, on one hand, the visual code. On the other, that can retrieve and optimize the creation of visual options with dynamic infographics that present visual archive cohesion and consistency over time. This, we expect, is the new role for design and infographics with relation to visual archives.

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NOTES

1. Information Overload seen as an acceleration of technology that results in a change in the social fabric.
2. Datasets are present in many newspapers. The Guardian not only presents infographics but also releases its datasets.
3. Combines disciplines such as visual perception, color theory, psychology, sociology, engineering, design, among others.
4. Analytical conception is proposed as a characteristic that augments the cognitive ability of readers by making evident what has been hidden, being it, a chaotic set of data, a list of numbers or an object whose structure is excessively complex.

O OBJECTO IMPRESSO ENQUANTO INTERFACE NÃO DIGITAL

Marco Neves
Faculdade de Arquitetura, Universidade de Lisboa

RESUMO

Perante o aumento considerável de invenções e produtos, desenvolvidos com recurso a tecnologias digitais, a noção de interacção tornou-se gradualmente associada às criações, cuja existência se baseia em exclusivo, nestas tecnologias.
Também a quantidade significativa de literatura especializada, que rapidamente se formou, terá contribuído para confundir o conceito de interacção com os sistemas computorizados. Desde o aparecimento do Grid Compass e do trabalho desenvolvido por Bill Moggridgge e Bill Verplank, que o sentido de "design de interacção", não é o domínio da interacção propriamente dita, mas que considerando esta como garantida, se dedica a relações que se estabelecem com o hardware e o software.
Apesar disso, nos últimos tempos, os designers que trabalham em suportes digitais, têm assente a noção de interface, não num conjunto de ecrãs estáticos, mas num processo de correspondência, entre o computador e o utilizador, solucionando situações através da conexão "if-then".
O termo "interacção", que não é exclusivo do âmbito digital, pode ser compreendido fora de uma mediação computorizada. Ao aprofundarmos o seu estudo enquanto conceito amplo, e por inerência, a percepção da interactividade enquanto alternância na relação comunicativa, deparamo-nos com a possível afinidade a outras áreas de intervenção projectual. Como consequência, uma desejável constatação de interfaces, sem recurso ao universo binário da informática, mas que permitam semelhante ligação interactiva com os respectivos utilizadores.

Poderá ser esse o caso dos objectos impressos, que dependem consideravelmente da acção dos designers gráficos. O entendimento que hoje se faz sobre o design gráfico, fruto da sua prática, mas também da sua história e teoria, afasta-o de alterações significativas nos seus resultados. A matéria impressa é produzida e avaliada, mediante a diferenciação visual e estilística dos seus autores, restringindo assim, contributos diversificados e complementares para a sua análise e futuro desenvolvimento. A abordagem tradicional do projecto em design gráfico, considera uma presença estática do objecto impresso e não a sua modificação no tempo, sujeito a possíveis alterações, em função dos pedidos dos utilizadores. Falta-lhe a compreensão do comportamento do objecto enquanto interface, que permita um nível de interacção, ainda que não digital. Poderemos desse modo, ao isolar o que determina nas criações digitais, a sua constituição enquanto interfaces, estudar a relação com os objectos impressos, de modo a analisá-los e concebe-los como interfaces não digitais?
Pretende-se assim, explicar a interacção, enquanto conceito desvinculado de uma determinada presença tecnológica obrigatória. Que ao ser associada posteriormente a criações digitais, que ao longo da história recente se têm afirmado como objectos de elevada importância, veio a originar e aperfeiçoar gradualmente sistemas de interacção específicos. Estes vão da prevalência do point and click sobre o teletype, à afirmação da metáfora do desktop; do desenvolvimento dos GUI (Graphical User Interface) nos sistemas operativos dos computadores pessoais, à expansão do hipertexto na Web.
Propõe-se uma abordagem metodológica qualitativa, de carácter exploratório e descritivo. Assente numa revisão da literatura principal, que permita operacionalizar o conceito de interacção e que constitua em simultâneo, um quadro de conhecimento desta relação, entre as características de interacção e sua identificação ou transposição para a matéria impressa.
Uma síntese deste percurso pode originar informação, passível de ser cruzada com um exame aos objectos, cuja tecnologia de produção é a impressão e que transportam consigo, a tradição visual usada no design gráfico. Será desenvolvida então, uma análise de casos, agrupados e descritos através dos métodos de observação directa e observação enquanto utilizador, pesquisa documental e registo físico de alguns objectos.
Prevê-se uma compilação de características que potenciam a interacção e que sejam transferíveis para a matéria impressa. A inclusão do conceito de interacção na prática do design gráfico, inserida de modo estratégico nos objectos, pode determinar a compreensão da matéria impressa enquanto interface, ainda que desvinculado de uma presença electrónica e permitir o estudo e concepção do design gráfico para uma acção-reacção, expectável na relação com o utilizador.

PALAVRAS-CHAVE
Interacção, objectos impressos, design gráfico, interface

"O termo 'interacção', que não é exclusivo do âmbito digital, pode ser compreendido fora de uma mediação computorizada.

INTRODUÇÃO

Uma quantidade de literatura especializada, terá contribuído para confundir o conceito de interacção com os sistemas computorizados. Desde o aparecimento do Grid Compass e do trabalho de Bill Moggridgge e Bill Verplank, que o sentido de "design de interacção", não é o domínio da interacção propriamente dita, mas que considerando-a como garantida, se dedica a relações estabelecidas com o hardware e o software.

Apesar disso, os designers que trabalham em suportes digitais, têm assente a noção de interface, não num conjunto de ecrãs estáticos, mas numa correspondência entre o computador e o utilizador.

O termo "interacção", que não é exclusivo do âmbito digital, pode ser compreendido fora de uma mediação computorizada. Ao aprofundarmos o seu estudo, deparamo-nos com a afinidade a outras áreas de intervenção projectual. Como consequência, a uma constatação de interfaces, sem recurso ao universo da informática, mas que permitem semelhante ligação interactiva com os respectivos utilizadores.

É esse o caso dos objectos impressos, que dependem da acção dos designers gráficos. O entendimento que se faz sobre o design gráfico, fruto da sua prática, mas também da sua história e teoria, afasta-o de alterações significativas nos seus resultados. A matéria impressa é produzida e avaliada, mediante a diferenciação visual dos seus autores, restringindo assim, contributos diversificados para a sua análise e desenvolvimento. A abordagem tradicional do projecto em design gráfico, considera uma presença estática do objecto impresso e não a sua modificação no tempo, em função dos pedidos dos utilizadores. Falta-lhe a compreensão do comportamento do objecto enquanto interface, que permita um nível de interacção, ainda que não digital.

Pretende-se assim, explicar a interacção, enquanto conceito desvinculado do computador. Que ao ser associada posteriormente a criações digitais, que ao longo da história recente se têm afirmado como objectos de elevada importância, veio a originar sistemas de interacção específicos. Uma síntese deste percurso pode originar informação, que se cruze com os objectos impressos e que evidenciam, a tradição visual usada no design gráfico.

Prevê-se uma compilação de características que potenciam a interacção e que sejam transferíveis para a matéria impressa. A inclusão do conceito de interacção na prática

do design gráfico, pode determinar a compreensão da matéria impressa enquanto interface, ainda que desvinculado de uma presença electrónica e permitir o estudo e concepção do design gráfico para uma acção-reacção, expectável na relação com o utilizador.

DESIGN DE INTERACÇÃO

Uma parte do campo do design apropriou-se do termo "interacção" para explicar a sua actuação. Mas o que se tem entendido por "design de interacção" (Moggridge 2007; Malouf 2009; Saffer 2010), é vago.

Surge definido, de modo mais específico, como "the practice of designing interactive digital products, environments, systems, and services" (Cooper, Reimann e Cronin 2007: xxvii). Mas o que torna então diferenciável o design de interacção, não é propriamente a interacção, que pode pertencer a qualquer área, mas o facto de tratar apenas produtos e sistemas computadorizados (Hallnäs 2006). A capacidade interactiva dos objectos digitais pode ser entendida como a simples interacção, que já existia em outros domínios, mas aplicada ao meio computacional.

DESIGN GRÁFICO

O termo "design gráfico" terá sido usado pela primeira vez por William A. Dwiggins (Heller 2004: 367). A expressão referia-se de um modo unitário à concepção de diversos objectos que, até então, se encontravam dispersos por várias profissões, entre tipografia, publicidade e criação de livros (Meggs 1998).

Trata-se de uma actividade projectual assente na construção de mensagens visuais e na manipulação dos elementos gráficos, recorrendo na maioria dos casos às tecnologias de impressão para produção em série. Assim, "graphic design is the business of making or choosing marks and arranging them on a surface to convey an idea." (Hollis 1997: 7). Esta noção de representação visual, determina a presença de um conjunto variável, o "estilo", que tem dominado a história e a reflexão sobre a actividade.

O design gráfico reteve para a sua linguagem, elementos visuais que resultaram de pesquisas individuais em outras actividades artísticas. Mas para Meggs (1998), as influências que o design gráfico recebeu nas duas primeiras décadas do século XX, se-

riam limitadas a uma época. Ao observarmos objectos gráficos do início do século XX, propostos pelas vanguardas artísticas, ressalta a sensação de que qualquer contacto com a matéria impressa era controlado por uma intenção formalista, que aproximava a apreciação do objecto de design gráfico daquela que seria concedida à obra de um pintor (Frascara 1988).
Esta influência é, "básicamente reducible a los efectos de un trasvase de estilos y tendencias formales, fenómeno mimético ajeno en principio a las causas ideológicas que originaron la creación de tales movimientos" (Satué 1994: 124).

Representam uma base de trabalho notável, mas que distancia o público no sentido comunicacional. As relações entre texto e imagem que assim se originaram, na generalidade dos objectos impressos ao longo do século XX, geraram um entendimento estritamente visual do trabalho de design gráfico.

Falta então a estes objectos, a compreensão de comportamento, equiparável à noção de interface, que permita um nível de interacção e de relação com os seus utilizadores, ainda que não digital.

INTERACÇÃO

A interacção surge definida como "qualquer efeito de um componente sobre o outro" (Faria e Perdição 2008: 680). Podemos caracterizá-la, de um modo geral, como a relação entre duas partes de um acontecimento, onde a produção recíproca de efeito pressupõe acção e reacção de ambos os lados. A interacção descreve-se, assim, pela troca de mensagens e por oposição à comunicação unidireccional.
Esta relação implica tempo e espaço, "an interaction is an episode or series of episodes of physical actions and reactions of an embodied human with the world, including the environment and objects and beings in the world" (Heeter 2000: 7).
Portanto, a interacção, não sendo restrita ao computador (Frascara 2004), pode estipular um outro entendimento da comunicação e por inerência, um outro modo de compreender o design gráfico.

INTERACÇÃO DIGITAL

O esforço dedicado à preparação do objecto digital para os diversos pedidos de cada utilizador apurou o seu sentido comportamental.

Foi o surgimento do rato e do desktop, que marcou o controlo directo do interface gráfico. Aliás, a materialização digital do desktop deu origem a uma forte metáfora que tem prevalecido enquanto Graphical User Interface (GUI) desde o PARC até à Apple.
Segundo Moggridge (2007), existiram dois caminhos paralelos de produção de interacção: o sistema teletype e o sistema point and click. O interface de teletype era constituído por um ecrã monocromático, com caracteres alfanuméricos que possibilitavam a execução de tarefas, depois de o utilizador as aprender e treinar. Já o point and click, usado no rato, diferenciou-se por permitir a execução de acções por parte do utilizador, sem que este necessitasse de memorizar todas elas. Este sistema oferecia melhor interactividade e o rato passou a ser dominante nos computadores.

Mas se o computador constitui um intermediário entre o utilizador e a informação digital, o sistema operativo do computador e as aplicações informáticas desenvolvidas para o seu funcionamento, requerem a concepção de várias acções e de elementos gráficos para a sua realização.

A observação dos GUI dos sistemas operativos, bem como de aplicações desenvolvidas para funcionarem directamente na Web, permitem estabelecer uma síntese de características. Estas foram agrupadas por categorias, comuns às diversas criações digitais, que possibilitam a interacção em ambiente digital. O conjunto com as respectivas descrições é apresentado no quadro 1.

Categoria	Propriedades
Point and click	o Uso de dispositivo de apontar o Avanço no acesso à informação desejada pelo utilizador, através do seu pedido
Drag and drop	o Deslocação e reorganização de elementos
Visualização	o Modificar o modo de observar um elemento ou informação
Navegação	o Apresentação e selecção de informação
Desdobramento	o Conjunto de opções, onde o utilizador percorre informação sem ter de a memorizar o Item pretendido, diferencia-se visualmente dos restantes o Definir quantidade de informação
Hiperligação	o Acesso a uma informação diferente o Diferenciação visual do elemento que vai possibilitar o acesso
Inserção de texto	- Produção escrita em local concedido para o efeito
Customização	- Disponibilização de conjunto de opções para conteúdo e/ou formatação visual - Modificação do aspecto visual pelo utilizador

Quadro 1 Categorias de interacção digital.

A ALTERNATIVA IMPRESSA

È possível a partir desta síntese, estabelecer uma comparação, na observação de vários casos, entre o interface digital e o objecto impresso. Como exemplo podemos admitir a categoria de desdobramento, reconhecível nos elementos e acções do pull down menu dos sistemas operativos (figura 1).

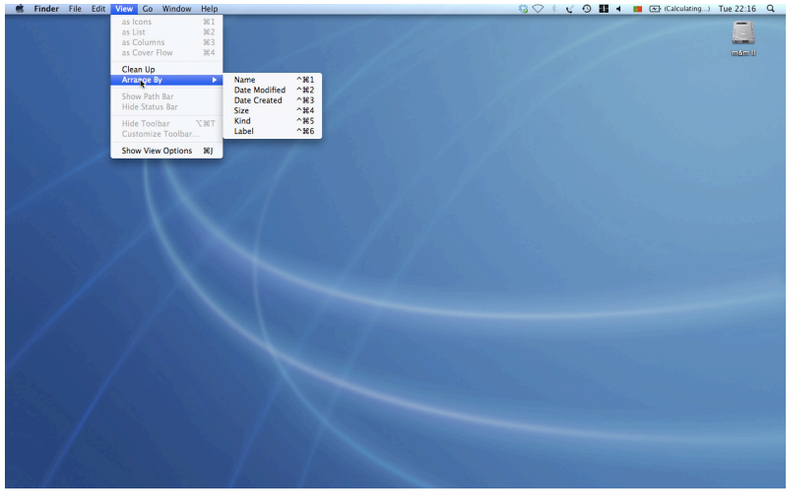

Figura 1 Pull down menu do Mac OS X Leopard.

Mas também reconhecível no livro/desdobrável The Night of the Living Dead Pixels das Éditions Volumique (figura 2).

Figura 2 The Night of the Living Dead Pixels, Éditions Volumique.

As possibilidades digitais, ainda que em grande número, nem sempre se comparam à tactilidade do material impresso. Existe uma característica tridimensional efectiva, que os objectos impressos têm e que é cedida pelas dobras, cortes ou rasgões. A sua produção permite a inclusão das características de interacção digital.

CONCLUSÃO

O design gráfico têm-se centrado na construção de formas visuais, mas não no processo da sua utilização. Embora a matéria impressa possibilite desempenhar acções, não tem existido um aproveitamento que una esta capacidade com as consequências de um contexto alterado pelas tecnologias digitais.

A adesão a estas tecnologias e ao uso quotidiano da Internet, causa modificações na actuação do designer gráfico, demasiado rápidas para se avaliarem. Mas, em paralelo, o âmbito digital possui, potenciais respostas para o desenvolvimento adequado da actividade de design gráfico.

A constituição de categorias de interacção digital precede uma possível aplicação aos objectos impressos. Com o propósito de aumentarem a manipulação e a interacção com os seus utilizadores.

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NOTAS

1. Comercializado a partir de 1982, foi um dos primeiros computadores portáteis.
2. Para este estudo, a expressão "design gráfico" irá restringir a observação e a produção à matéria impressa e não a um alargado conjunto de objectos, electrónicos e digitais, que podem ser contemplados em outras noções, como "design de comunicação" ou "multimédia".
3. Palo Alto Research Center.

STORIES OF CHAIRS: O DESIGN E OS MEDIA DIGITAIS PARTICIPATIVOS COMO INTERFACE DA CULTURA LOCAL A UMA ESTÓRIA GLOBAL

Jorge Brandão Pereira
IPCA / ID+
Heitor Alvelos
UP / ID+.Portugal

RESUMO

O presente artigo apresenta uma investigação que relaciona o design de comunicação e os media digitais participativos no contexto da indústria de mobiliário da região de Paredes, no norte de Portugal. Argumenta-se, através do projecto "Stories of Chairs" (storiesofchairs.org), que os media digitais participativos são um dos vectores estratégicos contemporâneos para o envolvimento dos cidadãos com a cultura do design. Sustenta-se que o design e os media digitais são parte integrante e motor de desenvolvimento da contemporaneidade social, cultural e económica, onde as narrativas, simultaneamente globais e locais, produzem agora profundas mudanças, acrescentando dimensões afectivas, lúdicas e regeneradoras para o desenvolvimento que se pretende. O surgimento e visibilidade do design –como projecto e estratégia– écada vez mais reconhecido na cultura digital em que operamos e propô-lo como uma ferramenta estratégica para o desenvolvimento estimula um novo modelo económico para a região, cruzando as indústrias tradicionais com as indústrias e actividades criativas contemporâneas. O design e os media digitais participam

na elaboração da comunicação, utilizando os recursos expressivos próprios do meio. Pelas suas repercussões, pode-se afirmar que a convergência do design de comunicação e da cultura digital abre um novo território de interface para a investigação, com realce sobre os seus métodos e processos. Se a comunicação se apoia historicamente num trilho de inovações técnicas e tecnológicas que modificaram os conceitos de tempo, espaço, relações pessoais, linguagens ou actividades humanas, actualmente, em vertigem tecnológica, a forma de tratar a mensagem (enquanto unidade da comunicação), de a distribuir e de a comunicar, prenuncia a necessidade de novas reflexões sobre o seu impacto. Numa abordagem cada vez mais colaborativa e participativa, através de práticas de imersão nos ambientes de conhecimento, participa-se na construção colaborativa da experiência da comunicação e enfatiza-se a importância da dinâmica desse processo participativo. O caso de estudo desenvolvido na investigação ésustentado no potencial de se tornar um "território simbólico" para todos os agentes envolvidos nesta "história". Fomentando a partilha criativa de histórias sobre o universo da cadeira, em si um objecto universal, e inserido no projecto Pólo do Design de Mobiliário, promovido pela autarquia local, que quer intervir para a revitalização da indústria do mobiliário de Paredes, a cadeira éo ponto de partida para essa reinvenção. Para a construção deste património desenvolveu-se uma metodologia de implementação que articulou a participação global, a partir da plataforma participativa online, com a participação local, através de actividades de envolvimento com os cidadãos e das quais surgiram novos conteúdos relevantes. Estas actividades, que decorreram entre 2011 e 2012, incentivaram a participação dos cidadãos para o conceito do design e alertaram para a indústria local, permitindo através dos media digitais a construção colectiva desse novo território, do qual todos tomam parte e se sentem parte. Esta participação fomentou uma maior ancoragem do projecto aos cidadãos, com benefícios económicos, sociais e culturais, pois difundiu narrativas e reforçou a afectividade de um projecto global denso e complexo. O global participa no local e Paredes, como território, responde a essa criatividade. De acordo com as questões de investigação do estudo, desenvolveu-se uma abordagem de índole interpretativa e qualitativa, em que os autores observaram e participaram no desenho da própria estratégia e sua implementação. A abordagem metodológica implementada permitiu conhecer, descrever, compreender e reflectir sobre um fenómeno específico enquadrado num contexto complexo, onde se encontraram em interacção diversos factores. Em certa medida, adoptou-se uma estratégia metodológica de "etnografia colaborativa", onde a conceptualização do projecto, o trabalho de campo e o processo de reflexão e escrita se organizam num percurso dinâmico. Esta observação participante permitiu uma visão holística e reflexão constante, para construir e desenvolver um quadro conceptual – com base na teoria e prática – tornando visível e comunicável o processo de evolução da investigação. Como plataforma aberta e participativa, e janela de ligação para o projecto complexo ligado ao design e ao desenvolvimento industrial,

cumpriu uma missão de interface entre cidadãos e criatividade. Através deste processo de interacção entre o digital e o analógico, Stories of Chairs perpetua essa missão de ligação ao território e estratégia da narrativa e regeneração simbólica da região, tornada possível, em parte, por esta mobilização e participação.

KEYWORDS
Design; Participação; Stories Of Chairs; Media Digitaish

BIOFEEDBACK INTERACTION DESIGN FOR DIGITAL STORYTELLING: AN INTERACTION DESIGN FRAMEWORK FOR ANALYSES OF HYPER-FILM NARRATIVE CONTENT USING AFFECTIVE PHYSIOLOGICAL DATA

Luís Frias
UNL / UT Austin. UBI, Portugal.

ABSTRACT

The last two decades have witnessed an exponential increase in research connecting disciplines related to emotion, cognition (such as psychology and neuroscience) and the area of computer science and information technologies such as the design of physical and embodied affective interfaces. Rosalind Picard in her seminal book Affective Computing [1997] envisioned and identified the goals for the new generation of computer systems then starting to appear. Fuelled by the development of physical (embodied) computing and networked systems that shaped the definition of Ubiquitous Computing by Weiser (1993) a new spatially pervasive, interactive relationship revolutionized the way we use computers and shortened the semantic gap between physical reality and information content. From the diversified range of sensors with the ability to read and transmit physical context specific data to the global flows of information and knowledge sharing provided by the development of Internet tools and semantics, the digital world literally invaded our daily

existence, permeating our emotional embodied cognition. These processes led Dourish to the notion of Context Aware Computing (2001) and embodied interaction (Dourish, 2004). This approach oriented HCI studies, normally addressed from a mechanical perspective of interaction, towards Phenomenological processes and context specific Ethnographies, shaping new methodologies for design and evaluation of intelligent systems (Dourish, 2007). Picard´s (1997) considerations about emotion as physical and cognitive phenomena identified the need for Affective Systems to integrate in their database the various physical expressions of "Sentic Modulation" (1997, p.25-30) and other psychophysiologic aspects of emotion, instead of using verbal semantic identification. Both Picard's and Dourish's contributions were determinant to the achievements of the last decade in the area of Ambient Media, Affective Systems and Emotion (Lugmayr et al., 2009) and their role in the creation of a rich interactive narrative experience, particularly the hyper-film format. The research goals for affective computing and emotion synthesis identified by Picard (1997) have led the main efforts of investigators during the last decade in order to: 1. Build Affective Engineering for digital systems that can read, recognize and evaluate Emotion Biosignals (Picard, 1997; Haag et al., 2004; Nasoz et al., 2004; Li and Chen, 2006; Kim and André, 2008; Hristova et al., 2009; Kim and André, 2009; Knapp et al., 2009; Pantic and Caridakis, 2011); 2. Develop an Ontology (HEO) to describe and classify Human Emotion semantics (Obrenovic et al., 2005; López et al., 2008; Grassi, 2009); Research in these various fields has become more intrinsically pervasive than ever and the study of emotion related phenomena, even when centered around the field of digital storytelling and interactive film, needs to consider the relevant research in related disciplines such as psychophysiology, affective computing, embodied interaction, new interactive narrative formats and film. In this last area of digital cinema and interactive film, the relationship between film studies and cognitive research on embodied emotions has become increasingly more relevant as new film experience formats are developed. To address this problematic a research framework, and subsequent prototype system, for experimental work needs to be defined focused particularly on the study of audience emotional states and how biofeedback signals can be used to build an interaction system that can augment multi-sensory semantic. Two different but related aspects will be analyzed: 1st- How affective biosignals data can be used to inform an interaction system that can provide a deeper immersive experience in narrative flow and interactive film? 2nd- How does the design of the system and its embodied interaction influence the structure of the narrative? The design of this interaction framework will be oriented by recent research models and data of studies in the field with special focus on data from emotion biosignals captured through direct physiological measures, namely: Electrodermal Activity (EDA) and Electrocardiogram (ECG). Methodology In order to address the research questions enunciated above, a methodological research framework based on an Integrative Mixed Methods (IMM) approach will be followed (Castro et al., 2010). The intrinsic

multidisciplinary characteristic of research combining fields such as psychophysiology, storytelling and film, affective systems and embodied interfaces calls for "rigorous mixed methods designs that integrate various data analytic procedures for a seamless transfer of evidence across qualitative and quantitative modalities"(Castro et al., 2010, p.1). This approach will take Dourish's questions (2007) into consideration when designing research that addresses emotion within a technological context. The intrinsic cultural embodied values of emotion and their relationship with Cognition implicate an aprioristic approach to design in the context of HCI. This allows researchers "to think past the representationalist point of view" (Dourish 2007, p.7) and be able to integrate Emotion as "interactional rather than representational. This conclusion does not simply raise implications for design; it is an implication for design (p.7). This design framework will be able to test the hypotheses raised by the research questions and infer results by allowing cross analyses of qualitative and quantitative evidence, either by data conversion of thematic categories into thematic variables or by recontextualization of statistic results (2010, p.345).

KEYWORDS

Affective Interaction, Hyper-Film Narrative

OBJECTS OF STORYTELLING: FUTURE INTERFACES OF TOMORROW

José Silva
CIAUD. Portugal

ABSTRACT

The present article focuses the development of UX design system based on substantial object interaction, presenting a reflection and foresight on the concept.
The article relates the concepts of UX design, storytelling and the physical nature of future multisensory interfaces.
The current progress in UX interface anticipates a scenario where interaction environments will gather several technologies already available, but not yet refined. The recent developments allow to foresight several systems, where substantial objects some of them, today merely decorative, embed with sensors will play in the future a distinct role in user interactions. They will enable, deliver and initiate their symbolic characteristics in a storytelling assembly sequence.
Technology and concept will allow fetching from the past symbolic statement on objects, triggering a renewal of ancient methods in information retrieval and visualization and consequently a digital interface dilution in substantial objects. Certain interactive actions will resemble more with ancient rituals, where each object had a special symbolic meaning, triggering actions when near other objects or when performing certain actions.
In those future UX environments, the desire will play an important role, taking advantage of substantial objects and empowering functionalities based on the symbolic value present on the storytelling flow. Those interfaces of tomorrow will allow a scenario where different surfaces will interact enabling direct actions in their symbolic aesthetic qualities and delivering different functionalities to the object "skin".

KEYWORDS
Communication Design, UX design, storytelling, interfaces, information visualization

The recent development in UX interface design anticipates a scenario where UX environments will gather several technologies already available, but not yet refined. Making possible to foresight interfaces where substantial objects some of them merely decorative can play a distinct role in interactive systems, delivering and enacting their symbolic characteristics assembled together in a storytelling sequence. Technology and concept will allow to bring back a new symbolic statement triggering a renewal of ancient methods in information retrieval and visualization.

When developing metaphors to apply in object interaction, those objects physical in their nature go beyond the screen frame and the limited bi-dimensional nature seen and familiar to so many users, today in 2014.

The Arthur C. Clarke's Third Law "Any sufficiently advanced technology is indistinguishable from Magic" fits well in the new paradigm where the holistic interface grows.

In Arthur C. Clarke´s phrase, we can humbly, add the word "myth" to magic. The magic and myth perspectives, beyond the requirements for specialized skills in the story creation, need to be coherent in the storytelling context. The storytelling skill, a unique capability to tap into a complex situation people, was always present in human society. Experienced and recognized by all, establishes a form of connection to the audience. Storytelling is the conveying of events in words, images and often sounds by improvisation or embellishment. In this sense, stories are events conveyed to the audience through the skillful use of media (Alexander, 2011, pag. 11).

Objects go beyond an apparent graphic shape, and their symbolic value expands with their physical presence. Empowered by the materiality and their symbolic logic as triggers to various activities, when users initiate rituals or logic actions within the story path. Future interfaces will work with synesthetic operators, covering different senses and amplifying the user experience. Those future interfaces will allow a vast sensory interface system, the objects and interfaces nurture themselves in a cycle, energizing the storytelling output. The interface logic is hidden in the story as also the partial comprehension by the user. In this sense, the interface could be selective in the user range and his ability to access the system and message reasoning. Only who knows the story and understands the "motto" will ultimately obtain the information.

The apparent cryptic nature, for the unaware, in some of those future interfaces help the secrecy of some information and data contained in the system. The code to open and access those contents will be always linked to the user knowledge on a specific story or hidden logic behind an apparent plain narrative. This interface logic is present in many religions, when some ritualistic objects act in a global and complex mainframe, and the proper use delivers the positive response from the sacred mainframe. Objects play a crucial role as interaction actors performing a multitude of reactions, from those, users must choose the correct sequence and interaction between them, to activate the desired responses.

A global description of such system shifts away from the technical settings specifications that allow a multitude of operations within the net of things.

Other systems project this link between interface and storytelling, systems such as the "Assimilate System" by Damian Hills, a visual collaborative storytelling system that enables participatory narration by means of tangible user interaction. The essential feature of the interface is to incorporate participants creative actions by embedding metaphorical schemes, through its mechanics and from the visualization of self-organizing content to support collaborative narrative comprehension and by visualization of the system's self -organizing feedback that attempts to arrange the themes coherently (Hills. 2011. pag. 295). In the contemporaneous context, the interface systems have a relation through situated actions; the gestural actions drive the experience and support the conversational aspects associated with storytelling.

A system portraying storytelling as objects of interaction will allow a new reuse of myths and will reinforce the storytelling as primary operator. These elements play a significant role as key points in the interface, within the system, they only carry the access to information and not the information in itself. The logic belongs to the narrative, flow and dramatic evolution contribute to empowering the emotional engagement with users.

These systems through their physical interactions could improve the present condition associated with automation through a significant improvement in the way user deals with interactions surfaces. According with Nicholas Carr, 2014, due to an evolution in computing power, more and more things are getting automated, all combining to deteriorate human skills, insulating individuals from the world. When automation distances users from their work, when it gets between individuals and the world, it erases the artistry from daily life (Carr, 2014). The author suggests some design

solutions, involving receiving ideas from game makers and designing tools that are always slightly challenging to use and creating create a compelling interaction giving back a certain level of artistry.

Myths and stories work as resonance boxes in the user memory, where interaction acts as operators within the "lesson" or concept carried by the message portrayed by an interface diluted in substantial and familiar objects.

Cinema plays a significant role in testing these new ideas as referred by Kyle Vanhmert, 2014, about the Spike Jonze's movie. "Her" is about the romance in the age of artificial intelligence. The director had something of a breakthrough, after poring over the work of Ray Kurzweil and other futurists trying to figure out how exactly, its main female role of artificial intelligence should operate, Jonze has reached a critical view: "Her", he realized, is not a movie about the technology (Vanhmert, 2014). The movie "Her" is a film about people and how technology dilutes between them.

One of the two main characters is, an awareness built entirely from code. The future looks more like the past, according with the movie director, Jonze's. Technology should not feel like technology, in this "slight future", as Jonze described it, has to do not with having much technology.

The main character Theo Twombly, a writer working for a love letter online service, in work, still sits in a desktop computer, but otherwise, he rarely has his face on the screen. Instead, he and his fellow future inhabitants are, generally speaking, either for themselves or their operating systems through a discreet headset earphone, a very different Bluetooth technology from the today omnipresent technology.
In this "slight future" things are seemingly low-tech everywhere. According to "Her" production designer KK Barrett there is a logic to this technological scarcity, the team decided that the movie not be about technology if it were present it should be invisible.

Technology has not disappeared, in other words. It is dissolved in everyday life, in a future where technology is more people-centered. The movie "Her" shows a world where the pendulum has swung back to the other direction. A place where a new generation of designers and consumers accepted that a technology is not an end by itself and is the real world that society is supposed to be connecting (Vanhmert, 2014). Everywhere the technology is virtually invisible. The movie director had help finding the contours of this slight future. Jonze's had conversations with designers based in

New York studio Sagmeister & Walsh and with Elizabeth Diller and Ricardo Scofidio, principals of architecture firm DS + R. As production designer of the film Barrett was responsible for making this simpler future a reality.

Throughout this process, it was inspired by a visual compendium of futuristic predictions from various times in history. The book reminded the director what not to do, showing many things that never happened. All prediction is subject of reflection and practical implementation. The future is much simpler than society, or a culture could assume.

In the future society technology could exist with little evidence to the outside. In the movie Theo smartphone was designed to be "substantial", something that first "feels good in the hand". A coupled device that looks more like an art deco cigarette case. The movie character uses much less often than consumers use smartphones nowadays; is functional, but it is not ubiquitous. As an object, it is more like a wallet or watch. In terms of industrial design the object represented is an artifact of a future in which machines do not shout its sophistication. Represents a future where technology has become developed to the point of invisibility.
The film deconstructs the design and the visual appearance people associate with technological design. The main interface of the film is the voice Theo communicates with the OS AI through a discreet earplug.

As Barrett predicts; In fact, when trying to imagine a future where consumers could free themselves from screens systems based around talking are difficult to avoid. A user can bring his operating system is put his earplug. When each different type of device runs an operating system that can understand natural language, all menus, each tool, every function is accessible only by requesting it. A system created based on voice as an intermediary is burdened with a lot less complexity "under the hood" than we are today. The character represents a user living in a future where everything "just works".

The examples presented in the movie "Her" display alternatives perspectives, where digital interactive storytelling occur quickly diluted in the daily life. In the end, UX design will grab back the story to real life interactions, through multi-sensorial interactions on different objects users reach different levels of synergies.

However, if to conceive a larger system requires interactions between different devices (different objects), individually each device must allow more and more natural interactions allowing a future integration by closing into previously arranged patterns.

The trend is already present in products that try new communication languages. Chris Harrison, a professor in the Future Interfaces Group at Carnegie Mellon University along with Carnegie Mellon Ph.D. students Gierad Laput and Robert Xiao, designed a new smart watch concept. The team hopes that this device will unlock the real potential of increasingly small areas of interaction present in a big variety of mobile devices. With the Carnegie Mellon prototype, the user can pan left and right to explore the map, use a twisting motion to zoom in and a depress action in the screen to access more information. Similarly, an alarm clock app shows the user twisting the bezel to scroll to the preferred time, while a rudimentary music app allows the user to flip through artists with a panning motion and adjust the volume by twisting and play/pause by clicking (Wired.com/VanHemert, 2014).

New inputs from research carried out from UC Berkeley, and Stanford University engineers allow new perspectives in generating a system network between objects. The research group printed an ant-sized radio onto a silicon chip (paywall), able to charge itself by scavenging energy from the signals it receives. According with the research team, this system, working in higher frequency lets this little radios send data at extremely fast rates (3–4 times faster than an actual mobile phone), compensating for the lower volume of data it can send at a time (Wired.com/Stockton, 2014). The implications in business and UX design are enormous, although the devices have a short range of action, the system allows a chain of this chips to synch up. Interconnected each chip transfers information through each one of the circuits till the access point. The proximity factor works together with a discreet profile present in this technology. Allowing more refined and subtle systems letting stand out the object surface qualities, allowing an ample framework of surfaces of interaction.
In the simpler future, substantial objects will play a significant role in UX experiences, outfitted with their physical properties with aesthetic characteristics rejuvenated due to the amplifying possibilities of their subtle technology. Able to deliver a multisensory experience more in the root with the storytelling origins. In those UX experiences, in their hidden features of interaction rests the story mystery. Their properties will be only accessible to those who know the plot and in deeper levels of interaction, to those who understand the motto. In that perspective, UX system designers will promote the storytelling experience through invisible digital technology, indistinguishable from magic.

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FASHION ACOUSTICS: A SYNTHESIS BETWEEN WEARABLE COMPUTERS AND MUSICAL INSTRUMENTS FOR TRANSFORMING COMMODITIES INTO CREATIVE TOOLS FOR LIVE-ART RESEARCH

Alexandra Murray, Andrew Johnston, Sam Ferguson
University of Technology, Sydney. Australia

ABSTRACT

This paper introduces the idea of acoustic fashion objects for poetic expression by transforming everyday fashion commodities (shoes) into powerful new musical instruments for creative communication. We investigate methodologies associated with acoustic fashion objects (novel body-centric musical instruments) and how they can be implemented in-vivo-practice-based- research-workshops, to build a critical, creative visual acoustic language for live-art performance.

KEYWORDS
Fashion Acoustics, Fashion, Shoes, Wearable Computers, New Musical Instruments, Live-Art Performance, Commodity Fetishism, Dualism, Creativity, Practice Based Research, Chicks On Speed Objectinstrument, Shoethesizer, Eshoe

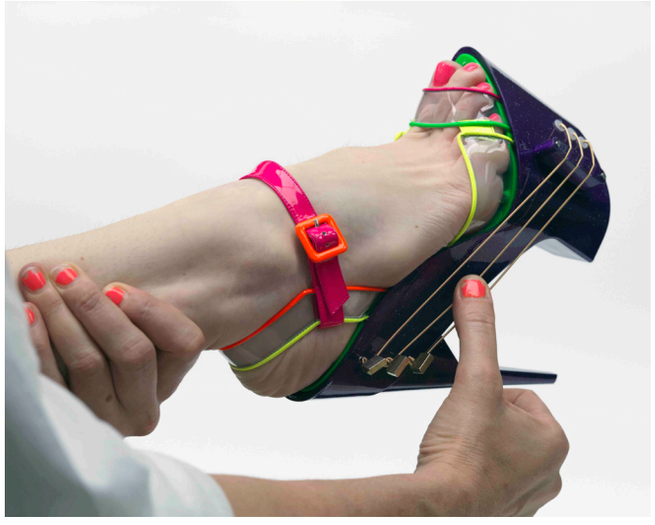

Figura 1 - E-Shoe (high heeled shoe guitar) by Chicks on Speed and Max Kibardin.Photo Gilmar Ribero © Chicks on Speed (2011).

INTRODUCTION

Over the past decade, shoe design is increasingly at the centre of the fashion industry, with High-heeled shoes, in particular, becoming the fashion accessory and obsession of the 21st century(1). With a rise in wearable technology research it seems natural that shoes become technologized proposing a dual function. Shoes can now enable a wearer with poor vision to "see" via audible GPS systems embedded in the soles of footwear, numerous shoes are being developed for augmented, virtual and mixed reality environments, with embedded sensors and audio-feedback functionalities to guide dance steps and movements on interactive new media platforms or like the "expressive shoes" developed at MIT by Joe Paradiso(2).

In the words of Sabine Seymour, "fashionable wearable's have great expressive-potential that is amplified through the use of technology"(3). The realisationof this potential to create audio feedback through expressive movement in performance research settings is significant and can give a new critical and expressive meaning to everyday designed commodities. This is an area which Birringer and Danjoux agree has been underdeveloped: "The relationship of fashion and wearable computing to music — and especially to computer music's understanding of the body in interactive, gesture-controlled performance as a kind of 'extended instrument' — awaits further exploration"(4).

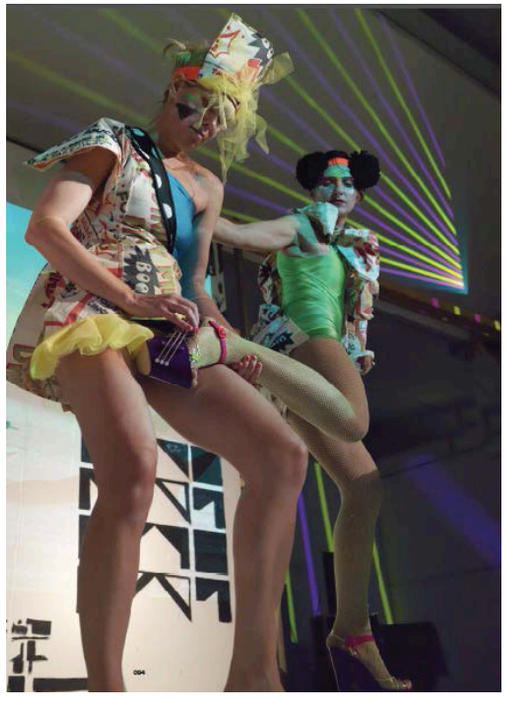

Figura 2 - Alexandra Murray-Leslie and Anat Ben-David, performing metaphor for "guitar-solo-pose" with E-Shoe during Chicks on Speed Don't Art, Fashion, Music, Dundee Contemporary Arts (2011).

As Valerie Steel suggests, shoes have long been associated with power, status, obsession, fetish and sex appeal, the shoe as object of desire. All of these "possibilities" would reveal the extent to which the shoe functions in terms of what the linguists George Lakoff and Mark Johnson might call an "absolute metaphor"(5) from foot binding to the obsessive collecting of shoes by Imelda Marcos, shoes don't have such a good name, they are related with decadence and superficiality. I argue that technology can add a poetic layer to footwear, transforming the shoe from visual commodity fetish object into a meaningful tool for new creative expression in live-art performance.

We use clothing and shoes as a medium for creative communication, transforming the culture of fashion into a movement based acoustic tool embodying contemporary culture at large. Director of the Guggenheim Foundation, Thomas Krens declares fashion is "an expression of the aesthetic and philosophical issues of our times"(6).

An underlying motivation of this research was to find new ways to integrate novel body-centric, fashionable musical instruments into live-art performance scenarios on stage to create a new form of audio-visual spectacle, for example like juxtaposing the

commodity fetish “E-SHOE, A High Heeled Shoe Guitar” (by art collective Chicks on Speed, see fig.2) using past clichés like the guitar rock pose to inform the choreography with the object. Through the movements and sounds associated with playing the instrument and the metaphorical representations of shoes in a psychoacoustic frame, commodity fetishism is researched through shoe as body-centric musical instrument through live-art performance experimentation.

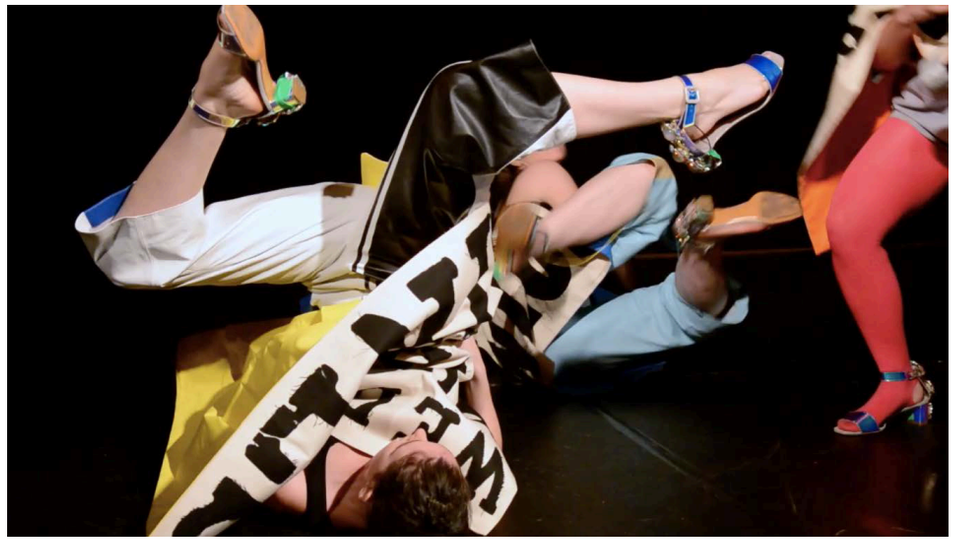

Figura 3 - Performers interpreting performance instruction “Remote Controlled Shoes” with Shoethesizer shoes, a scene from performance based workshop by Alexandra Murray-Leslie and Sam Ferguson. Photo © Alexandra Murray-Leslie (2013).

CONCEPTUAL FRAMEWORK AND METHODOLOGY

We discuss employing performance based research and practice based research methodologies as the main artistic concept for developing new patterns of creatively playing with fashionable commodities for musical expression (within a live-art performance setting) A series of 2 practice-based research case studies, herein titled performance research studies were undertaken (see fig.2 E-Shoe and fig.3 Shoethesizer). The practice based research studies served the purpose to develop ways to transform the shoe into a communicative musical device, develop its aesthetic design/functionalities and analyse performers relationships with fashion acoustic objects and their metaphorical movements.

Research questions that were addressed during the performance research studies:

- How can technology transform everyday fashion shoes into meaningful creative expressive artifacts for musical expression?

- How can shoes communicate through movement notation with a performers body?

- What is the language of a shoe? How can it be expressed in sound synthesis in live-art performance?

- “The psycho-sexual shoe”, what does it stand for when using synetics (7) methodologies in action research?

- What does it feel like to be a shoe? What are the personality traits of a shoe?

- What sound does fashion make, and how can a performer use fashion to make sound?

RESULTS

After the informal practice based workshops and seeing that the most innovative and new expressions with the fashion commodities as instruments occurred by surprise, without being planned; such as finding ways to reconfigure the shoe as a tool for political activism, by throwing it and sonifying it’s “movements”. The shoe throwing act refers to shoe throwing as political act in contemporary public demonstrations, which was interesting as it created a double function for the fashionable shoe, turning it into a commodity and tool for change, this was resolved through group discussion with the performers contrary to our initial approach of giving performers research questions and metaphors to perform. We have shifted the focus of our research to attempt to understand how a diverse group of individuals can develop ideas through temporary collective experiences via group discussion, brainstorming and play.

General reflection on shoe based art and our practice based experiments with “foot objects”, outcomes demonstrated:

- Human experiences with shoes as musical instruments

- performers drew attention to the shoe as instrument for communication and art-making

- performers expanded our understanding of the role of the shoe in commodity culture vs. non-market art culture

- The performance research highlights the extent to which the shoe functions as a form of performative thinking and doing

- performers created an aesthetic live, interactive experience with shoes

Overall the E-Shoe and synthesized shoe as new musical instruments succeeded in exploding disciplinarity in the persuit of a participatory experience with shoe-based art, self-amplified and performing outside of the shopping mall or luxury store, transforming the everyday shoe into an interface for participation and prosumerism. (The Performer becomes producer and consumer of a the commodity fetish object in performance).

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PRODUCT

PRODUTO

NOVO NORMAL

Afonso Borges
Universidade da Beira Interior

ABSTRACT

Accelerated consumption became indispensable to design issues of sustainability and viability of the market economy, invalidating the increase in consumption as solution. The existence of two unique consume pathways show it as part of the problem and its role in the increasing of noise. Changing in design after modernism, the fact that can no longer be seen as closed in project and finished in product, its imaterialisation, the transformation of material in service, changing the physical interface in software, the technological revolution, radically altered its role. The practice appears to be essential in its inversion. The need for increased product life arises as a suggestion. New Normal seeks to bring together different approaches: the exhibition Super Normal, familiarity, product-continued use, the defense of incremental design, appear as points of departure for the suggestion of a set of parameters.

PALAVRAS-CHAVE
Novo Normal, Consumo, Projecto, Evolutivo.

O consumo acelerado tornou incontornáveis para o design questões de sustentabilidade e a viabilidade da economia de mercado, colocando pelo menos em causa o aumento de consumo como solução. A obsolescência programada e o ciclo de vida dos produtos são hoje questionados como não foram em outros momentos de crise aguda, como no pós-segunda-guerra, ou em momentos de relativa estabilidade e crescimento, como todo o final do século XX, nos quais o consumo era visto como solução e não problema. Se antes falávamos de recuperação económica, hoje falamos de sobrevivência. (KLATT, 1995, 145) O crescente ruído nas prateleiras, a existência de duas vias únicas de consumo, idiosyncratic + expensive and ordinary + cheap (HARA, 2008, 239), evidenciam o design como parte do problema e o seu papel no agravamento do consumo e ruído. A democratização no consumo, a vulgarização do design, a sua visibilidade excessiva, a sua associação a decoração e supérfluo parecem continuar a empurrar o design na direcção da cultura de throw away.

A alteração do design depois do modernismo (THACKARA, 1988, 1), o facto de design não poder mais ser encarado como actividade fechada no projecto e acabada no produto, a sua imaterialização, a transformação do material em serviço, a alteração do interface físico em software, a revolução tecnológica, alteraram radicalmente o seu panorama e papel. Aumentaram os seus territórios, a quantidade de abordagens e cinzentos, abrindo a discussão a territórios mais vastos. Aumentaram também a confusão, a diluição de fronteiras e potencial para a perda do essencial, ou pelo menos do objectivo original. Entre os efeitos do aumento da visibilidade, ela própria discutível, estão a crescente tendência expositiva, as design weeks, a diluição das fronteiras entre design e arte, e a crescente aceitação do projecto sem constrangimento. Estão também o aumento de influência do designer-artista, ainda por influência do star system, e as incursões em território até ontem da arte. A aceleração dos ritmos de produção, a evolução tecnológica particularmente das RP, o acesso facilitado a modelos finais, trouxeram novas possibilidades. Mais rapidez de produção permite dedicar mais tempo ao essencial, mas tem potencial, já constatado, de acelerar o projecto para um nível de arbitrariedade (KLEMP, 2010) de eliminação do tempo de análise e refexão. Proporcionou também, particularmente na recente fase de maior boom do mercado da arte, o surgimento de pequenas séries. A globalização da comunicação permitiu a a sua divulgação de novas abordagens, novas ideias, assim como inundar o espaço informativo de ruído que será certamente filtrado pelo tempo, mas com o qual temos de viver.

A alteração da relação do design com o utilizador é clara, como evidencia a discussão que a explora, seja na observação e discussão do design como relacional (BLAUVELT,

2008) - existente na relação e não no produto - ou no debate do interface e relação unidireccional utilizadorproduto, nas recentes exposições Design and the elastic mind e Talk to me. Em contraste com a vulgarização e visibilidade extrema parece existir um certo risco de elitização da discussão, tornada em arte acessível para o utilizador, mas em debate pouco acessível ao designer projectista. Demasiadas vezes existe uma ausência total de ligação entre a discussão e a prática. A prática tende a ser puramente formal e desligada de qualquer conceito, debate ou mesmo consciência do momento, de sentido de responsabilidade social ou papel na melhoria da vida, servindo o marketing. Parece apenas sobreviver uma consciência de sustentabilidade material.

A prática projectual parece ser essencial na inversão do panorama de consumo. Essa necessidade parece ser sentida por vários designers, críticos, assim como de uma forma indirecta, por utilizadores. São inúmeros os exemplos de propostas de abrandamento, de movimentos mais visíveis como a slow-food, a sugestões de abrandamento do processo, a backto-basics, em alguns casos muito extremos até à pré-tecnologia. Não será concerteza necessário perder o que se conquistou.

A necessidade de aumento do tempo de vida do produto surge como uma das possibilidades de redução de consumo, não ignorando a redução e escolha material. Nesse sentido, Mateo Kries refere-se a Super Normal, exposição organizada por Jasper Morrison e Naoto Fukasawa, como o mo(vi)mento mais marcante na história recente do design moderno (KRIES, 2011). Refere-o como ideia sobrevivente a ciclos e modas dos últimos anos, particularmente à crise. As coisas podem ser normais sem serem banais. Procura o extraordinário e por outro lado a normalidade. Segundo Kries mistura ideia de minimalismo, com o experimentalismo de memphis. Super Normal, refere-se a muito normal, mas também a para lá do normal. Para Morrison funciona como um reminder dos motivos mais essenciais na base no design. (MORRISON, 2008, 103) Como a Ply chair de 1988 trata-se da concretização da necessidade de dizer alguma coisa. Super Normal é a base do que poderá eventualmente ser encarado como um movimento, mas Novo Normal não fica por aí. Na exposição Das gewonliches, Bazon Brock evidencia o produto vulgar. Em Design-real Konstantin Grcic assume a actualidade do design, mas a defesa de um certo sentido realista (GRCIC, 2010) e de constrangimento implícito ao design. Em New Simplicity é defendida a simplificação formal com reflexo de uma simplificação conceptual. A procura de normalidade surge em manifestos, na recuperação de valores modernistas - como nas múltiplas exposições e edições recentes sobre Dieter Rams - ou em práticas funcionalistas actualizadas - como é exemplo a Chair One, de Grcic. Eventualmente com um efeito maior, surge na prática de muitos designers e mesmo de empresas, numa convicção de necessidade de

criação de uma terceira via de consumo (HARA, 2008, 239), de boa produção, a preço e produção justos, não considerando ser mais aceitável ou sustentável produzir barato em países pobres para vender caro em países ricos.

Novo Normal é sugerido como procura de aglutinação de diferentes abordagens com uma procura comum de um novo paradigma de consumo, de redução real do throw-away e aumento da vida dos produtos. Baseia-se na esperança da importância do papel do design nesse processo, como solução e não problema. Tendo como ponto de partida Super Normal, aglotina à sua volta outras abordagens, procura encontrar sugestões e estabelecer parâmetros, estudar exemplos. Revisitam-se valores de realismo modernista, de intemporalidade e funcionalismo do Good-Design, de liberdade de Memphis, de simplicidade formal de Hecht, Chiaki Murata ou Takashi Iwasaki, ou visões mais radicais como o re-use, dar uma segunda vida, como sugerido por Tejo Remy em Lamp shade ou Milk bootle lamp. Ao contrário da maioria das reacções, não se sugere um corte com o passado, sendo a coexistência de eras um ponto fundamental.

O recurso a familiaridade de formas e ligação ao produto por uso-continuado de Morrison - surgem na defesa de um design evolutivo, que acredita na originalidade e inovação sem destruir o legado das gerações anteriores, (MULLER, 2008) a evolução de milénios. Naoto Fukasawa sugere o gesto, without thought, o recurso à memória, que como conceito pode ser eventualmente relacionado com aplicações em maior escala como a exploração do gesto de referência real do iPad ou OSX, dando origem a novos produtos, como o Magic Trackpad. Dando sugestões, procura-se pelo menos de discutir o assunto. Por muito que a prática muitas vezes não confirme o discurso ou o conceito dos produtos, são sugeridos muitos caminhos diferentes para um fim comum: a necessidade de aumentar a vida dos produtos, de negar uma cultura de desperdício. Simplificar, deixar o design de fora, (MORRISON, 2008, 28) invisível, parece um caminho, mas implica certamente muito design. (HARA, 2008, 238) Vivemos provavelmente um período de reflexão (KRIES, 2011), que virá eventualmente a dar origem a um movimento. Só o tempo e a história darão a distância para o afirmar. Muito menos será já a definição de uma era do design moderno, como sugere Blauvelt sobre o que chama de design relacional (BLAUVELT, 2008) mas parece ser pelo menos uma forte sugestão, de designers altamente comprometidos com a produção industrial, de críticos e curadores. Annie Leonard sugere a sensibilização (LEONARD, 2010), mas parece existir uma grande necessidade de uma solução projectual e produtiva. O produto pode alterar mais os costumes do que qualquer campanha publicitária, pela afirmação de projectos de design mais intemporal. Mesmo perante a desmaterialização, o produto vulgar continuará a ser utilizado e a ser a raíz do consumo, sendo necessariamente a localização da eventual solução. O pluralismo é essencial, exigindo mais a sugestão, a visita a parâmetros do que a definição de boas práticas. Talvez o design não venha a ser a referência intelectual do futuro, como sugerido por Antonelli (ANTONELLI, 2009), e a invisibilidade implique que não o permita, mas as suas decisões serão concerteza determinantes para o futuro.

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A CAMPANHA DO BOM GOSTO OU ANÁLISE DE UMA TENTATIVA DE DOUTRINA ESTÉTICA NUM PAÍS AUTORITÁRIO

Carlos Bartolo
Faculdade de Arquitectura e Artes da
U.niversidade Lusнada de Lisboa
Instituto de Histyria de Arte da FCSH-UNL
Bolseiro de doutoramento da FCT

ABSTRACT

The doctrine of Good Taste - From 1926 until 1974 Portugal lived under a dictatorship. The enactment of the 1933 Constitution established the power on a single-party corporative regime, ruling Salazar the New State as prime minister.
The National Propaganda Secretary was created in 1933 and, until 1949, was run by António Ferro, a writer connected to the modernism. As such, he developed a cultural policy based on the principle that culture should be a foundation of the Nation, recreating the national identity. With the help of some of the modernist artists, the policy was implemented through several programs that tried to indoctrinated the population in the fields of the fine, performative and popular arts and, obviously, design. The aim of this paper is to analyse this doctrine and understand how it was produced; the intentions and influences supporting it; how it derived from concepts usually irreconcilable; and to understand its consequences on the shaping of the national identity.

PALAVRAS-CHAVE
Design; Propaganda; Educação; Nacionalismo; Autoritarismo.

Espera-se de um regime de práticas totalitaristas, como foi Portugal a partir do golpe militar de 1926, e principalmente a partir da aprovação da Constituição de 1933 que instituiu o Estado Novo, a formulação de um conjunto de valores pelo qual se deve reger todo o país assegurando o seu fortalecimento e a manutenção da sua intemporalidade.

Daí sucede normalmente, qualquer que seja o espectro político que o fundamenta, o regime promover ideais tradicionalistas, fundamentados não só na celebração da sua história como na da unidade étnica, além de igualmente desenvolver sistemas hierárquicos que promovam a inquestionabilidade do poder pela própria sociedade. O método mais eficaz é a prévia doutrinação sobre as verdades instituídas pelo regime, suprimindo o desenvolvimento de verdades contrárias à sua, para tal sendo essencial divulgar estes valores pelos quais todos se devem reger.

A constituição do Secretariado de Propaganda Nacional em Setembro de 1933 veio colmatar essa falta. Um serviço de propaganda tornara-se uma ferramenta importante em qualquer regime, essencial num autoritário. E ainda que recusando a modernidade seria na realidade através das suas ferramentas que o Estado Novo propagaria a sua ideologia. "A propaganda surgia aqui como um vector fundamental de entendimento da sociedade em relação a si mesma, apresentando-se como uma espécie de revelador da sua «essência»" (MELO, 2001, p.54).

Em 1932, sobre o conceito por si criado de Política do Espírito, António Ferro desenvolveria a sua acção entendendo que "O desenvolvimento premeditado, consciente, da Arte e da Literatura é tão necessário, afinal, ao progresso de uma nação como o desenvolvimento das suas ciências, das suas obras públicas, da sua indústria, do seu comercio e da sua agricultura. [. . .] A Política do Espírito [. . .] não é apenas necessária, se bem que indispensável em tal aspecto, ao prestígio exterior da nação. Ela é também necessária ao seu prestígio interior, à sua razão de existir. Um povo que não vê, que não lê, que não ouve, que não vibra, que não sai da sua vida material, do Deve e Haver, torna-se um povo inútil e mal-humorado" (FERRO, 1932).aproveitando informar Salazar, quando mais tarde o entrevistou, que "Há aí duas dúzia de rapazes, cheios de talento e mocidade, que esperam, ansiosamente, para serem úteis ao seu País" (FERRO, 2007 [1932], p.59).

Trabalhando com estes rapazes, integrou na linguagem do regime a influência modernista da nova geração, a que ele próprio pertencia, numa atitude dúbia, que ao mesmo tempo que se digladiava pelo novo recusando a ortodoxia académica das Beaux-Arts, valorizava a essência do vernacular, do original, do primitivo. Este retorno às origens, esta procura do verdadeiro, era a base de muita da pesquisa e da arte produzida desde meados do séc. XIX e que facilmente se encontra reflectida nos textos de Pugin, Ruskin ou Morris; na produção das Arts and Crafts; nos fundamentos do pré-rafaelismo inglês ou dos nabis franceses; e na [re]descoberta das exóticas artes primitivas e dos folclores autóctones, valorizados à época em toda a Europa como fuga à disciplina académica.

Influenciados pelo poder de análise e síntese da modernidade, embora longe das versões mais radicais próximas do racionalismo abstracto e funcional, este grupo de artistas colaboraria com o SPN/SNI ilustrando os ideais do regime. A linguagem criada depurava as principais características formais das artes populares resumindo-as num conjunto de fórmulas facilmente identificadas. Posteriormente utilizava-as para a comunicação dos valores oficiais num discurso paternalista típico, ao mesmo tempo, da erudição de alguns dos modernismos e, obviamente, dos regimes autoritários.

A partir de 1933 um conjunto diverso de iniciativas foi desenvolvido pelo SPN/SNI: da realização de concursos à de exposições; da criação do Teatro do Povo e dos Bailados Verde Gaio, à criação dos Cinemas e Bibliotecas Ambulantes; do desenvolvimento de linhas editoriais próprias a um programa de prémios artísticos, entre outras. Mas seria na primeira série da revista Panorama que, de uma forma mais simples, e ao mesmo tempo mais expedita, se divulgariam alguns conselhos de boas práticas sobre o fazer e o viver o que, à época, se denominavam as artes decorativas e gráficas, e que poderemos hoje englobar no termo design. Se a Campanha do Bom Gôsto foi um conjunto de 16 artigos assim intitulados, pode-se considerar que toda a política editorial da revista pode ser lida, no seu cômputo, como uma enorme campanha de endoutrinação estética do país.

O objectivo enunciado logo à partida no primeiro artigo de Junho de 1941 (PANORAMA, 1941a) diria

"[e]stas páginas do Panorama ficam reservadas, todos os meses, para a divulgação, espontânea e desinteressada, das manifestações de bom gôsto ornamental que encontrarmos no país, e que estejam ao alcance da nossa objectiva, [pois o] que

sòmente nos atrai, pode, com facilidade, desiludir-nos. O que nos prende, é porque nos encanta. Por isso o bom gôsto dos povos é, turìsticamente, o melhor colaborador do pitoresco das paisagens" (fig. 1).


ATRAIR NÃO BASTA

PASCOA FELIZ

É PRECISO PREND

Campanha do bom gôsto

A amenidade do clima, as belezas naturais e os monumentos artísticos dum país ou duma província são, sem dúvida, poderosas fontes de atracção. Mas não basta atrair: é preciso prender. O que sòmente nos atrai, pode, com facilidade, desiludir-nos. O que nos prende, é porque nos encanta. Por isso o bom gôsto dos povos é, *turìsticamente*, o melhor colaborador do pitoresco das paisagens.

Hoje, documentamos alguns exemplos dêste bom gôsto, — Publicidade? Não. Merecido prémio. Estas páginas do Pa-

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objectos antigos, a outro com móveis e objectos modernos — desde que, no primeiro caso, tudo esteja certo (isto é: atraente, amável, civilizado) e, no segundo, tudo errado (ou seja: o contrário do que dissemos).

Por bom gôsto entende-se, portanto, aqui, determinado estilo, determinada graça, determinado toque de originalidade que faz com que a fachada ou a simples janela duma casa, a montra duma loja, um cartaz, o recanto duma sala de espera, a mesa duro restaurante, etc., nos

atraiam discretamente os sentidos e, carinhosamente, os afaguem. A nota justa do confôrto e da simpatia é-nos dada, assim, pela conjugação harmónica dos elementos plásticos (volumes e côres), em lógica e estrita obediência aos fins a que se destinam.

As legendas explicam o que as gravuras representam, objectivamente. Mas o que nelas se vê conduz até mais longe a nossa imaginação, ajudando-nos a compreender que o bom gôsto é o contrário do artificial, do pretencioso, do *feito em série* e... *dos jornais*.

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Figure 1 - Artigo "Campanha do Bom Gôsto: Atrair não basta, é preciso prender", Panorama no 1, Junho 1941, com cartaz de Tom (Ao Último Figurino), montras de José Rocha (SPN) e interior de Maria e Francisco Keil (restaurante Tito, Lisboa).

Logo aí ficava a entender-se ser Bom Gôsto um "determinado estilo, determinada graça, determinado toque de originalidade que faz com que a fachada ou a simples janela duma casa, a montra duma loja, um cartaz, o recanto duma sala de espera, a mesa dum restaurante, etc., nos atraiam discretamente os sentidos e, carinhosamente, os afaguem. A nota justa do confôrto e da simpatia é-nos dada, assim, pela conjugação harmónica dos elementos plásticos (volumes e côres), em lógica e estrita obediência aos fins a que se destinam", e que igualmente "[n]ão o faremos por serem de arte moderna, pois o bom gôsto não é moderno nem antigo".

No entanto imediatamente se referia que "[a] prova estará em que havemos sempre de preferir, por exemplo, um interior decorado com móveis e objectos antigos, a outro com móveis e objectos modernos - desde que, no primeiro caso, tudo esteja certo (isto é: atraente, amável, civilizado) e, no segundo, tudo errado (ou seja: o contrário do que dissemos)."

"Bom senso seria na realidade o termo mais vezes referido como sinónimo de bom gosto...

Assim, se por um lado, se referia o que poderiam ser princípios gerais e abstractos de harmonia quase funcional (a "estrita obediência"), por outro a referência à velha questão do antigo-moderno, parecia apontar na direcção oposta. No entanto depreende-se que esta não formulava uma regra obrigatória, como parece à partida, salvaguardando-se a possibilidade exacta do seu oposto: se o antigo fosse errado e o moderno certo, a preferência seria deste último. Mas rematava-se com uma frase que já não suscitava leituras tão diversas, "o bom gôsto é o contrário do artificial, do pretencioso, do feito em série e… do pires". O feito em série, referência à produção industrial, era à época quase sempre sinónimo do moderno, seguindo a herança Ruskiniana.

Bom senso seria na realidade o termo mais vezes referido como sinónimo de bom gosto, não sendo este usado para intitular a campanha apenas "por nos parecer mais clara e directamente apontada ao nosso objectivo a de BOM GOSTO" (PANORAMA, 1943).

O objectivo de ter um discurso claro e objectivo faria utilizar quase sempre uma linguagem enfática, descrevendo os casos sem pormenorizações nem detalhes técnicos. Os epítetos mais utilizados foram quase sempre sobriedade e honestidade, num paralelo com o pobre mas honrado que se almejava para todos os portugueses. Igualmente se utilizaria a simpatia, o pitoresco ou a amabilidade, humanizando-se objectos e espaços. Quando os casos de alguma forma fugiam à norma desejada, quer por modernidade excessiva ou por se afastarem estilisticamente do indicado, seriam referidas apenas as suas qualidades técnicas, o arrojo da obra, ou a vastidão dos espaços. No caso de excessos decorativos referia-se o acolhimento "que oferece aos mais categorizados estrangeiros" (sobre o Aviz Hotel em CUNHA, 1943), separando claramente os estratos sociais, e assim afastando-os do português comum.

Quase sempre defender-se-ia a "veracidade regional[…], incompatível com as falsas e despropositadas estilizações regionais" (sobre a estalagem do Lidador de Óbidos em PANORAMA, 1941b, p.20) em textos que elogiavam o bem-estar e a simplicidade rural quer se referissem a um hotel ou uma casa, aconselhando-se sempre a fuga à serialização, ao banal industrial e ao horror da urbe. Tinha-se o cuidado em referir a discrição e sobriedade nas pontuais conjugações do antigo e do moderno "contrári[as] daquele estilo chamado novo-riquismo" (sobre um interior luxuoso de Tom em PANORAMA, 1941b, p.21). Em 1943, em artigo sobre a própria casa de António Ferro, sublinhar-se-ia o antigo "espírito irrequieto do […] locatário - protótipo da sua geração" e a recente "responsabilidade dum cargo oficial" referindo-se que a "casa

sofre[ra] a evolução do seu morador". Elogiava-se ainda a harmonia neo-clássica alcançada na conjugação dos elementos modernos, "uma questão de gôsto e de inteligência", e como tal um exemplo do domínio tradicionalista sobre a modernidade (MASCARENHAS, 1943).
De realçar que metade dos artigos da Campanha foram dedicados às artes gráficas e comunicação, discutindo-se montras, cartazes, publicidade e edições, em textos que denunciavam uma consciência clara da disciplina e que, esquecendo o discurso tradicionalista, apresentavam exemplos consentâneos com o que se praticava lá fora. De igual forma se insistia na necessidade de se recorrer aos profissionais para a concepção e produção de qualquer tipo de projecto, sendo a maioria dos projectos desenvolvidos pelos criadores que colaboravam nas próprias iniciativas do SPN/SNI, elas mesmas notícia. Apresentaram-se, predominantemente, exemplos de interiores, quer privados quer públicos, segundo um sentido próximo da Gesamtkunstwerk, onde o mobiliário e os materiais de revestimento, os pequenos objectos decorativos, as obras de arte e a própria arquitectura eram entendidos como um todo responsável pelo objectivo alcançado, sendo só muito raramente as suas partes analisadas per si. Em artigos próximos do final da década já se anunciavam resultados da Campanha apresentando-se projectos de iniciativa privada que, com mais ou menos apoio das equipas do próprio SPN/SNI, tinham sido desenvolvidos, nomeadamente na indústria hoteleira.

Quanto aos objectivos terem sido alcançados, foi uma questão que os próprios responsáveis viriam a levantar, quando da realização da exposição dos Catorze Anos de Política do Espírito, em 1948, "Até que ponto uma montra bem delineada, a apresentação mais cuidada duma edição, um arranjo de bom gosto numa casa ou a decoração de um teatro - não terão sido influenciados por esse espírito não serão um resultado desse sistema de trabalho e dessa atitude? Esta interrogação envolve precisamente tudo o que de imponderável existe numa obra cujos contornos nem sempre é fácil definir mas cujos resultados - concretos e reais - estão bem à vista de todos" (PANORAMA, 1948).

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GENERACIÓN DE LOS REQUERIMIENTOS DE UN PRODUCTO MEDIANTE LA APLICACIÓN DE LA SISTÉMICA Y CRITERIOS DE SOSTENIBILIDAD

Julio Cesar Rivera Pedroza,
Bernabé Hernandis Ortuño
Universidad Politécnica de Valencia ETSID, Spain

ABSTRACT

AS hypothesis suggests that is necessary to include in the generation of new concepts, products and services, aspects and sustainability criteria in the conceptual phase to generate products with any degree of sustainability. Shortening the distances between the procedures of ecodesign or sustainable design and design common procedures. Therefore this research is based on systems analysis, considering the phases and stages of Concurrent Design Model for developing a particular product and to analyze how this can be seen in aspects of sustainable design. Principally our analysis focuses on the conceptual design and the possibility of linking sustainability criteria design requirements that any product must have in their formal, functional and ergonomic components. The aim of this study is to analyze the requirements and determinants that must be established to design an object that includes concepts and sustainable criteria, resulting in a design product that is environmentally friendly.

KEYWORDS
Systemic, Sustainability, Requirements, Methodology, Subsystems.

INTRODUÇÃO

Durante el desarrollo de productos, sean estos artesanales, semi-artesanales o industriales, es importante resaltar que en muchas ocasiones es necesaria la implementación de un mayor apoyo técnico y de una conciencia productiva en el diseñador industrial; de modo que considere e incluya dentro de sus labores, la introducción e implementación de conceptos y criterios de sostenibilidad. En muchas de las empresas que cuentan con la valorización del diseño, los métodos empleados para el desarrollo de productos no resultan suficientes para abordar las nuevas consideraciones y requisitos de carácter ambiental. Esto hace que resulten unos objetivos para el diseño, cada vez más comunes en la actualidad, en donde la economía ya no es lo más importante puesto que se deben considerar y correlacionar con ésta las variables ecológicas y sociales. En esta investigación se considera la viabilidad de aplicación de criterios de sostenibilidad en la fase de generación de conceptos para el diseño o rediseño de productos sostenibles.

METODOLOGÍAS DE DISEÑO

Se hace necesario el análisis de conceptos y herramientas que consideren los aspectos ambientales desde las primeras fases en el diseño y desarrollo de productos, en donde se apliquen principios de desarrollo sostenible y eco-innovación; aplicables ya no a productos existentes sino a la generación de nuevos conceptos, productos y servicios. Punto de referencia que puede ser tomado en cuenta, en lo que respecta a las actividades de un equipo interdisciplinario, que en conjunto con el diseñador industrial determina las características funcionales, estructurales y estético-formales de productos industriales y sistemas de productos, considerando factores técnico-económicos, técnico-productivos y socio-culturales, dentro del proceso metodológico de desarrollo de productos.

APLICACIÓN DEL MODELO DE DISEÑO CONCURRENTE

Para este estudio nos basamos en el Modelo de Diseño Concurrente de Bernabé Hernandis. El modelo se compone de un Sistema Exterior y un Sistema de referencia (sistema en estudio o sistema producto). En este último se sitúa la atención del diseñador o del equipo de diseño. Se compone principalmente de subsistemas fundamentales (Formal, Funcional y Ergonómico) que dependen del sistema en estudio y

que se denominarán subsistemas fundamentales; los cuales a su vez se componen de sub-sistemas, componentes, variables, objetivos y elementos.

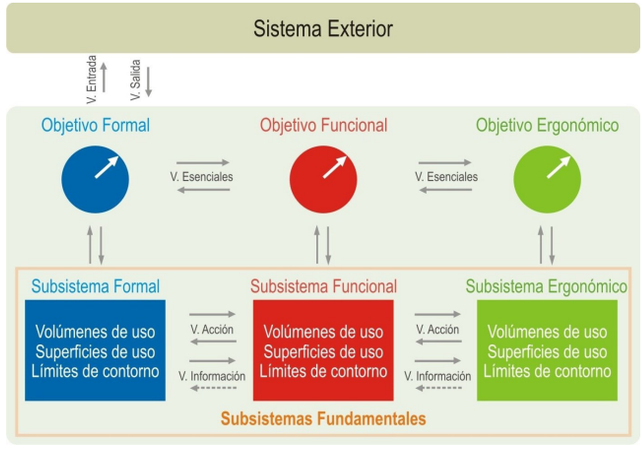

Figura 1
Modelado teórico (B. Hernandis, 2002)

Del modelo se analizó, desde el desarrollo de conceptos y planteamiento de objetivos, hasta la observación de las etapas y sus fases correspondientes. Teniendo en cuenta las relaciones entre las mismas, las retroalimentaciones y las resultantes consideraciones que puedan surgir como producto de éstas. A continuación se muestra el esquema desarrollado para la aplicación del Modelo de diseño concurrente con criterios de sostenibilidad, basado en el modelo propuesto por Hernandis.

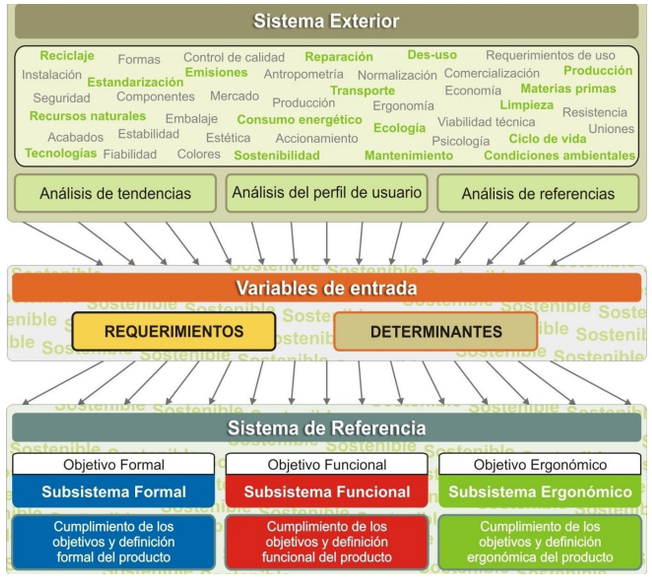

Figura 2
Esquema de la aplicación del Modelo de diseño concurrente con criterios de sostenibilidad (adaptado de Hernandis 2010)

La forma de aplicar el enfoque sostenible al Modelo de Diseño Concurrente fue mediante al análisis del "Diseño Conceptual". Ya que un diseño conceptual puede definirse según Pugh como aquel que representa la totalidad del objeto proyectado. En otras palabras, representa la suma de todos los subsistemas y componentes que integran el sistema completo. Según esto se puede decir que, el punto de partida del diseño conceptual está en una necesidad detectada, de la cual se generan "los requerimientos y determinantes del producto"; los cuales, determinarán las pautas que se seguirán durante todo el proceso de diseño y establecen los límites de actuación en los posteriores estados del producto.

La propuesta se enfoca en el análisis del sistema exterior propuesto por Hernandis, en el que se analizan los suprasistemas que pueden afectar el producto a proponer y se establecen variables que pueden definir su configuración.

Figura 3 - Sistema Exterior (adaptado de Hernandis 2010)

Dentro del sistema exterior se encuentran los suprasistemas como serían producción, transporte, estética, acabados, etc... Los cuales pueden afectar el producto a proponer y definirán las variables que concretan la configuración del mismo. Una manera de facilitar el análisis del sistema exterior es el enfoque de todos los componentes hacia tres subsistemas principalmente: Análisis de Tendencias, Análisis del Perfil de Usuario y el Análisis de Referencias. En estos análisis es necesario considerar las tendencias, los escenarios de esas tendencias, la determinación de un perfil de usuario objetivo y la definición de los requerimientos que puedan satisfacer sus necesidades, además de considerar las referencias o productos que puedan ser similares en alguno de los aspectos de nuestro proyecto.

Una parte importante del análisis de la propuesta planteada se encuentra en el enfoque que se le dio a las variables de entrada; ya que en esta fase se busca una

"convergencia" de los análisis realizados en el sistema exterior (tendencias, perfil de usuario y referencias) para su posterior clasificación según los campos de aplicación. Logrando así una "divergencia" según los campos de aplicación de los requerimientos y determinantes, antes de realizar el análisis de los subsistemas fundamentales (formal, funcional y ergonómico).

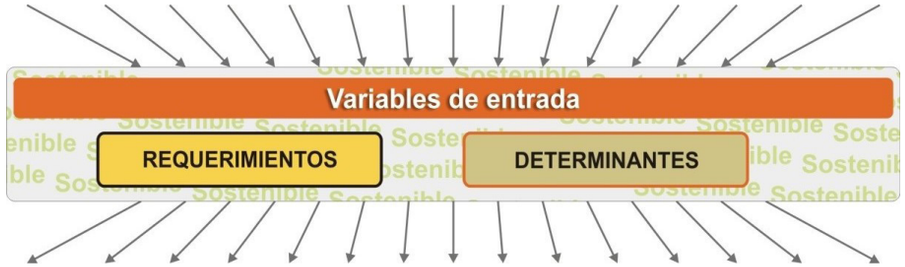

Figura 4 - Variables de entrada

En el análisis de las variables de entrada se identifican las características del proyecto y se definen los requerimientos y determinantes previos en sus aspectos generales antes de realizar la subdivisión en los subsistemas fundamentales. En esta etapa además de analizar los requerimientos y determinantes se deben aplicar criterios de sostenibilidad en la sistémica.

La manera de integrar una herramienta o metodología de diseño sostenible o ecodiseño fue con la aplicación de los principios de la Rueda de las Estrategias (LiDS-wheel, Brezet and van Hemel 2007) en el modelo de diseño concurrente; ya que sus principios se pueden aplicar en la etapa conceptual en el desarrollo de un producto y proceso de desarrollo.

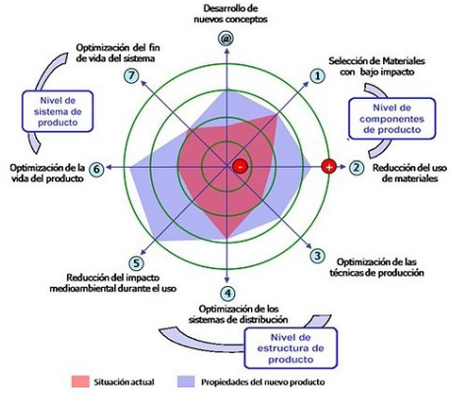

Figura 5
Rueda LiDS. Adaptada de Brezet and van Hemel 2007

A continuación se muestran los requerimientos de un jardín vertical en cuanto a forma, factores productivos y factores ambientales.

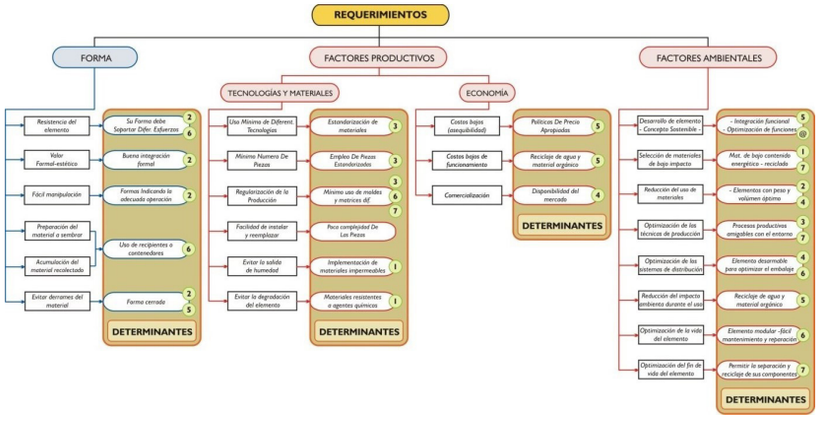

Figura 6 - Requerimientos y determinantes

Estos factores en ocasiones se subdividen en otros (como en los factores productivos: tecnologías y materiales y economía).

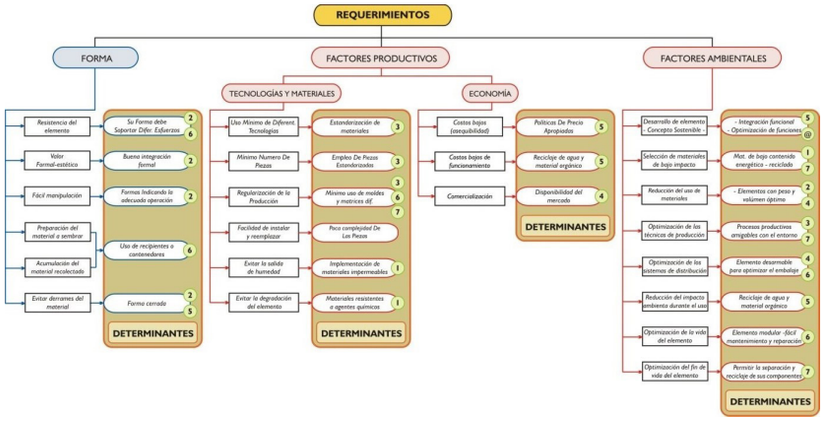

Figura 7 - Posibles determinantes con enfoque sostenible

Surgen unos determinantes que contienen consideraciones a tener en cuenta en cuanto a posibles soluciones formales, de factores productivos y ambientales en este caso. Como se puede ver la forma de relacionar los criterios de sostenibilidad de la Rueda LiDS es considerando qué estrategia de esta herramienta (indicado con números en círculos verdes) pueden, además de cumplir los requerimientos, ser determinantes en la configuración del producto.

CONCLUSIONES

Es posible relacionar criterios de sostenibilidad (de la Rueda LiDS en este caso) con el Modelo de Diseño Concurrente, vinculando éstas estrategias con los requerimientos y determinantes del producto resultantes del análisis del sistema exterior. Los requerimientos resultantes finalmente se deben ubicar según su compatibilidad en los componentes de los subsistemas fundamentales de Forma, Función y Ergonomía que componen el Sistema de referencia o Sistema Producto.

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EQUIPAMENTO URBANO – INTERFACE NA CIDADE DE TODOS PARA TODOS

Joana M. Magalhães Francisco; Rute Gomes
Faculdade de Arquitectura, Universidade Técnica de Lisboa, CIAUD

RESUMO

Este artigo considera apropriada a pesquisa de possíveis soluções de equipamento urbano para todos. É escrito do ponto de vista da exploração do caráter interativo do equipamento urbano como utilizador/cidade, nomeadamente numa ótica sinestésica ou de apropriação de sensações identitárias. Considera como os paradigmas da inclusividade, standardização e de identidade deverão ser considerados/aplicados desde o início do desenvolvimento da metodologia de projeto. Esta afirmação de equipamento urbano inclusivo standardizado, e identitário parte de um conceito de intervenção que projeta uma imagem de conjunto coeso da urbe. Este equipamento urbano deve definir de modo inequívoco a urbe e ao mesmo tempo contribuir para a sua integração na cidade como um todo, tendo por objetivo potenciá-lo como mediador cultural e identitário interativo que corresponda de uma forma inclusiva, standardizada e sustentável a uma sociedade em crescente mutação. Como desenhar equipamento urbano com princípios de inclusividade, standardização, identidade numa perspetiva de desenvolvimento sustentável da cidade onde será aplicado, tornando-o num interface de intercâmbio e comunicação? Contextualizando esta problemática focar-nos-emos nas práticas de design projetual de equipamento urbano, onde se sugestiona uma metodologia projetual a desenvolver-se no âmbito da investigação, com resultados práticos, funcionando estrategicamente com recursos epistemológicos e do pensamento crítico em torno do desenvolvimento sustentável, para a criação de novos

produtos na área do design de equipamento urbano. Os resultados indicam a relevância de dois aspetos: 1) o desenvolvimento de uma metodologia projetual e de avaliação de equipamento urbano que deverá ter em consideração a inclusividade como contexto do planeamento de uma cidade sustentável, numa perspetiva que contém fatores económicos, ambientais e sociais, numa lógica metodológica do processo de projeto de equipamentos inclusivos. 2) a produção de objetos do nosso quotidiano segundo visões, do ponto de vista tecnológico e científico que assentam em conceitos que procuram o equilíbrio entre os fatores sociais, ambientais e económicos da urbe, bem como estes deverão expressar os contextos culturais em que surgiram e comunicar sobre os utilizadores, os seus modos de vida e valores. Através do processo dialógico mediado pelo design - que engloba cidade, inclusividade, standardização, sustentabilidade e identidade - todo o equipamento urbano passa a diferenciar e a valorizar o espaço público, e desta forma define padrões de qualidade nas cidades.

Palavras - Chave
Equipamento Urbano; Inclusividade; Interatividade; Standardização; Identidade;

EQUIPAMENTO URBANO-INTERFACE NA CIDADE DE TODOS PARA TODOS

A estrutura das cidades baseia-se numa conjugação de usos, só a "complexidade e a vitalidade de usos dão às regiões das cidades estrutura e forma adequadas." como nos indica Jacobs (2000). Estes usos, segundo a autora, são essenciais para o qual o desenho urbano pode contribuir. "É necessário tornar clara a extraordinária ordem funcional dessas áreas de vitalidade." (Jacobs, 2000, p.419).

Procura-se assim a exploração de possíveis soluções de desenvolvimento de equipamento inclusivo standardizado numa perspetiva de desenho sustentável que reflita e reforce a identidade, a sua aplicação prática, bem como a contribuição para a maximização e a qualidade e o uso do espaço no planeamento das cidades.

Nos centros urbanos encontramos problemas como, a desorganização do espaço público, envelhecimento da população, a existência de um crescente número de pessoas com mobilidade reduzida, o aumento das barreiras urbanísticas, edificação antiga e degradada, por outro lado, a excessiva uniformização do equipamento urbano leva à perda da identidade cultural.

Figura 1 (ID149-01): Penha de França e Graça, Lisboa 2012, ©Joana Francisco

Todas estas perspetivas motivam-nos a demonstrar que a inclusividade não está nos antípodas da standardização, e assim procurar analisar e avaliar o equipamento inclusivo neste contexto. Sendo assim, de que modo o equipamento urbano pode ser um interface entre o utente e a cidade?

Nesta perspetiva Shorten (1993) indica-nos que os princípios do desenho sustentável deverão ser apoiados num processo de integração holística de análises e ações, considerando a ligação do ambiente com apoio em quatro princípios: futuro (as consequências a longo prazo para as gerações futuras); ambiental (a totalidade dos custos ambientais); igualdade (distribuição das consequências das ações pelas presente e futura gerações);participação (máximo envolvimento da participação individual e dos diferentes interesses no processo de tomada de decisão e implementação). Martin (2000), Doak (2000), Wilson (2000) e Meadwcroft (1997), corroboram estes princípios, este último autor, acrescenta, a mais-valia da participação da população no acompanhamento e validação do projeto, que resulta num ganho de tempo e diminui algumas dificuldades operativas que em certos casos se colocam, como a falta de informação e conhecimento necessários dos locais ou espaços.

Para que o equipamento urbano seja um interface entre utilizador-cidade, temos que explorar/entender do ponto de vista do seu significado (pré-conceitos) / comunicação (mediação (promoção do objeto /identidade) / função / espaço-relação). Ao descrever o equipamento urbano, temos que ter em consideração as formas urbanas. A forma refere-se à morfologia do espaço onde o equipamento urbano está aplicado, por outro lado não nos podemos descartar da informação acerca das pessoas que interagem com estes equipamentos.

Este equipamento urbano terá que ser um objeto ou família de objetos "camaleão", em que a sua neutralidade permita que absorva o contexto geográfico/local/imagética/ cultura, e ao mesmo tempo que seja presente e ausente, mas que não se torne num obstáculo quer físico quer visual. Através da identidade, uma vez que o EU é representativo do contexto geográfico e cultural da cidade.

É imperativo que se desenvolva uma metodologia projetual que envolva a participação dos cidadãos ao longo de todo o processo do desenho de equipamento urbano. O facto dos cidadãos se envolverem durante todo o processo projetual, nas suas cidades, e juntando o compromisso do poder político, transforma-se a estrutura social, e física das urbes. Além disto procura-se que a tecnologia desenvolvida e a desenvolver, tenha em conta as questões ambientais e como Rogers diz "humanizem-se as cidades". A tecnologia deve beneficiar /assegurar ao utilizador os seus direitos básicos. A produção em grande escala pressupõe à partida um mercado em massa, tal como o mercado em massa exige a produção em massa. Isto leva a que o hiato entre o produtor e o consumidor, se torne maior. Durante a revolução industrial, o artesão conhecia pessoalmente os seus clientes, nos dias de hoje, é impossível ao produtor chegar mesmo a uma pequena parcela dos consumidores finais. Torna-se importante efetuar um levantamento das necessidades e contextos.

"A sociedade, na forma dos seus governos e outras instituições, tem a responsabilidade de concentrar a dinâmica da vida moderna, de dirigir a aplicação de nova tecnologia, de confrontar velhos valores com os novos." (Rogers, 2006, p.22)

Do ponto de vista económico e social é do interesse dos governos, o incentivo à exclusão de barreiras arquitetónicas e urbanísticas, e contribuir assim para um meio integrado e acessível que permita o desenvolvimento e a produção inclusiva. Devem ser assegurados a todos os cidadãos, sejam ou não portadores de alguma limitação, o direito de usufruir livremente, bem como interagir com o equipamento urbano.

Os conceitos e a prática do design inclusivo no ambiente construído mostra-nos por um lado a amplitude do campo de aplicação e as vantagens de o praticar. Ao alargar estes conceitos à metodologia projetual, estaremos a melhorar o uso dos espaços, e o interface entre os mesmos e as pessoas que habitam ou usam.

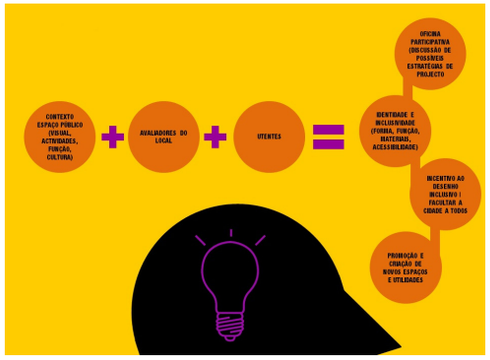

Figura 2 (ID149-02): ©Joana Francisco

Em suma, para projetar e construir equipamento urbano torna-se necessário fazer análises de campo onde serão possíveis traçar directrizes para o desenho sustentável de um projecto de equipamento. É imperativo que o equipamento urbano e o espaço público onde este se encontra aplicado, seja avaliado, considerando o contexto histórico, a simbologia e morfologia da urbe, a dinâmica social e funcional, bem como a interação dos utilizadores, interligando estes factores de forma sustentável.
Antes de se iniciar o processo projetual o designer precisa de fazer o levantamento das necessidades do local, isto poderá passar por: interação dos avaliadores do local com os utentes dos equipamentos urbanos por forma a perceber quais os problemas que se levantam, promovendo ao mesmo tempo uma oficina participativa com o propósito de discutir possíveis estratégias na implementação do projecto de equipamento. Compreender o conhecimanto que os utentes possuem acerca do local, as suas afinidades e expectativas, e possíveis conflitos sócioambientais na relação dos utentes com os equipamentos, e discutir estratégias para a consolidação dos equipamentos urbanos a serem desenhados.

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DESIGN AS MEDIATION

Heath Reed
Andrew Stanton
Jon Wheat
Simona Francese
[1]Sheffield Hallam University, Sheffield, England

ABSTRACT

Through a case study this paper discusses the role and value of design as interdisciplinary interpreter and translator of research to industry. Focused in the area of industrial design and bio-forensic science the study has led to patented and industrially licensed outcomes. Of significance in this study is how design practice acted both within and interfaced with academic research. This interdisciplinary project was delivered by product design practitioners, engineering researchers and bio-medical researchers. The study shows how in these settings design engagement in scientific research can bring about benefits that include tangible manifestations of research toward industry acceptance and how design can be used to help validate scientific research itself. The paper describes how the research was conducted, how design worked beyond 'skill' delivery and how we may exploit 'design thinking' and its significance in shaping and directing basic research itself; "…moving design from a problem solving activity to a question asking activity" (Gwilt 2011). Arguably, such engagements empower the design community to ask 'what' as well as 'how' should we be designing. Finally, the paper makes the conceptual argument that we may be able to capitalise on university based research expertise to a greater extent where commissioning agents, industry, and academia deploy design practice as a 'horizontal' rather than a 'vertical' discipline. 1. CASE STUDY: FROM LAB TO INDUSTRY Academia is cited as a key partner to industry, critical in seeding innovation that secures future successful and sustainable economies. However, "There is no simple model for interaction; the diverse business

needs and diversity of supply from universities leads to complexity in relationships" (Wilson 2012). Of significance in this study is how design practice functioned within the academic research institution and was integrated with the research study rather than acting as a later stage contractor. The research project aimed to develop new techniques and equipment to support emerging branches of forensic science, namely scene of crime fingerprinting. 1.1 SETTING THE SCENE Conventional fingerprinting techniques are used to place or eliminate suspects at crime or related scenes through graphical comparisons of deposited fingermarks with the fingerprints of suspects (the principle that human fingers carry unique patterns that can be transferred to surfaces of interest). Fingerprinting techniques have changed little since first introduced in the 1890's, while materials and processes have evolved iteratively, the fundamental purpose of graphical matching remains unchanged. The novelty of the techniques described in this project are their capability to reveal a much broader spectrum of forensic information than graphical matching. 'In police casework, if a fingerprint is smudged or if the donor is not listed on a fingerprint database, it can be impossible to make an identification. However, it is known that the (chemical) composition of a fingerprint varies from donor to donor and it is thought that this information could be used to give intelligence – on a donor's age, gender, ethnicity, medical history or drug habits (or) assist with the determination of the age of a latent fingerprint, which would significantly aid police investigations'(X) To achieve this, a technique known as MATRIX Assisted Laser Desorption Ionization - Mass Spectrometry Imaging (MALDI MSI), had been lab tested with some success by the scientific team (X). The process works by chemically separating the fingermark sample and production of an image/data set of resulting constituent parts (ions). In this application the process identifies compounds, bio-markers, peptides and proteins etc. (components of the target materials mass spectrum). The process can also indicate the quantities of species of interest such as drugs or explosives. However, to enable this process a chemical micro powder (MATRIX) is required to be applied to samples prior to a co--crystallisation process (induced by a fine spray of organic solvent (analyte)), known as the 'dry wet' method (X). Crystallised samples are then targeted by a (rasterizing) laser resulting in data describing the target fingermarks chemical composition. To be successful, the 'dry' MATRIX micro particulates, averaging 20 microns in diameter, are required to be distributed over sample fingerprints evenly and homogeneously. Homogeneous MATRIX particulate distribution is critical as an uneven distribution results in 'differential vaporisation' during the (laser) desorption phase of the process. Therefore, the initial and key challenge for the interdisciplinary team was to investigate appropriate means of depositing MATRIX at the desired levels of homogeneity, at a specific resolution and in repeatable ways, repeatability being crucial for further scientific validation. Should aspects of this technology be 'real world' (outside laboratory) enabled, such forensic evidence offers investigators valuable evidence in securing convictions. To this end the design team were tasked with developing

device formats and configurations for 1. Further scientific validation and 2. Future transfer to industrial/field applications. At project outset, from a design point of view, the aims and objectives were arguably not dissimilar from many commercially commissioned industrial design briefs. However, as design became engaged it became clear that more information was needed before a device performance specification could be developed. Although the lab tests showed great promise with regard to analytical technique, existing lab settings simply did not offer means by which the MATRIX could be deposited in the required way. Scientists produced their samples with conventional fingermark 'exposure' techniques, dusting the fingermark with MATRIX using finger print brushes or applying it directly to the sample and removing excess material. Levels of particle homogeneity were difficult to control. Further, reproducibility in the samples was not well understood as the amount of enhancing powder and pattern of distribution on the sample were dependent on both MATRIX deposition method and the quality of the sample fingermark. Effectively communicating across disciplinary boundaries what was required to build device specifications that met project objectives meant design needed to become more fluent in the science on the basis that better understandings of the scientific processes involved would lead to a more effective and richer dialogue between the partner disciplines. Led by design, three discovery exercises were developed which will now be discussed in greater detail.

KEYWORDS

Research Directions, Innovation, Forensic Science, Interdisciplinarity, Product Design

SETTING THE SCENE

The research project aimed to develop new techniques (and complementary technologies) to support emerging branches of forensic science, namely scene of crime fingerprinting. Conventional fingerprinting techniques are used to place or eliminate suspects at crime or related scenes through visual comparisons of deposited fingermarks with the fingerprints of suspects based on the principle that human fingers carry unique patterns that can be transferred to surfaces of interest. Fingerprinting techniques have changed little since first introduced in the 1890's, while materials and processes have evolved iteratively, the fundamental purpose of visual matching remains unchanged.

The novelty of the techniques described in this project is their capability to reveal a much broader spectrum of forensic information than visual matching. 'In police casework, if a fingerprint is smudged or if the donor is not listed on a fingerprint database, it can be impossible to make identification. However, it is known that the (chemical) composition of a fingerprint varies from donor to donor and it is thought that this information could be used to give intelligence – on a donor's age, gender, ethnicity, medical history or drug habits (or) assist with the determination of the age of a latent fingerprint, which would significantly aid police investigations' (Francese, et al, 2009, '11, '12, '13)

The process identifies substances the suspect may have come in contact with or ingested (exogenous and semi-exogenous compounds respectively) prior to the crime and could give useful information on the habits, lifestyle and activities of the suspect, thus helping narrow the pool of suspects. To achieve this, a technique known as MATRIX Assisted Laser Desorption Ionization - Mass Spectrometry Imaging (MALDI MSI) had been lab tested with some success by the scientific team. The process involves chemically separating the fingermark sample into its constituent parts (lipids, peptides, proteins), and the production of data sets that describe them.

To enable this procedure a chemical micro powder (MATRIX) is required to be applied to samples prior to a co-crystallisation process induced by a spray of organic solvent. The process is known as the 'dry wet' method (Francese, et al, 2009, '11, '12, '13). Crystallised samples are then targeted by the MSI device laser and 'desorbed' resulting in data describing the aforementioned target fingermarks chemical composition.

FROM LAB TO INDUSTRY

Should aspects of this technology be 'real world' (outside laboratory) enabled, such forensic evidence offers investigators valuable evidence complementary to fingerprint graphical matching. To this end the design team were tasked with developing enabling technology device formats and configurations for both designs showing potential for transfer to field applications and for the purposes of further scientific validation.

To be successful, the 'dry' MATRIX micro particulates, averaging 20 microns in diameter, are required to be distributed over sample fingerprints evenly and homogeneously. Homogeneous MATRIX particulate distribution is critical as an uneven distribution results in 'differential vaporisation' during the (laser) desorption phase of the process. Therefore, the initial and key challenge for the interdisciplinary team was to investigate appropriate means of depositing MATRIX at the desired levels of homogeneity, at a specific resolution and in repeatable ways, repeatability being crucial for further scientific validation.

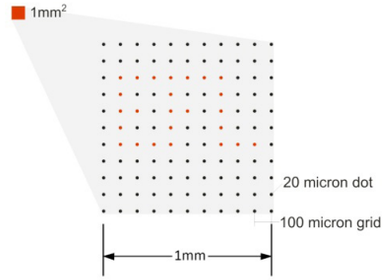
At project outset, from a design point of view, the aims and objectives were arguably not dissimilar from many commercially commissioned industrial design / engineering briefs. However, as design became engaged it became clear that more information was needed before a device performance specification could be developed. Although the lab tests showed great promise with regard to analytical technique, existing lab settings simply did not offer means by which the MATRIX could be deposited in the required way. Scientists produced their samples with conventional fingermark exposure techniques, dusting the fingermark with MATRIX using finger print brushes or applying it directly to the sample and removing excess material. Levels of particle homogeneity were therefore difficult to control. Further, reproducibility in the samples was not well understood as the amount of enhancing powder and pattern of distribution on the sample were dependent on both MATRIX deposition method and the quality of the sample fingermark.

Effectively communicating across disciplinary boundaries what was required to build device specifications that met project objectives meant design needed to become more fluent in the science on the basis that better understandings of the scientific processes involved would lead to a more effective and richer dialogue between the partner disciplines. To this end, design discovery exercises were developed, four of these will now be discussed in greater detail.

GRAPHICAL REPRESENTATIONS TO DEVELOP MUTUAL UNDERSTANDINGS

Individual MATRIX particles were invisible to human eyes being in the region of 10 to 30 microns each in diameter: over the area of a fingermark thousands of particles make up the MATRIX coating we aimed to control. Industrial designers are regularly called upon to work on a range of physical, tangible objects and products. They are most frequently of a human scale, things we sit on and in, things we hold, push, pull or physically interact with in some way. In this case the design team needed to consider how they might control particles not visible to the naked eye.

To understand and communicate the scale of target distribution amongst the project team a series of graphic illustrations (Figures 1 & 1a) were produced by designers. Illustrations were used as a way of asking and confirming; 'Is this what you mean?' if you looked down a microscope at a test sample and saw this, is it what you hope to achieve?'



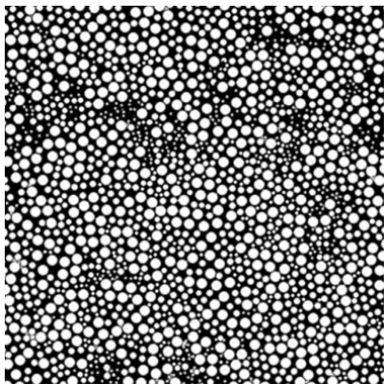


Figure 1.
One of a series of graphic representations of desired particulate distribution over 1mm square area and 1a (right) Agreed target particle distribution

In this way the 'intangible' was made tangible and the team was able to agree target distribution characteristics.

SKETCH EXPERIMENT PHYSICAL TESTING

Early stages of the work involved investigating a range of potential enabling technologies for depositing MATRIX to agreed resolutions. These were presented by the design team and discussed amongst the whole team. Concepts where assessed and ranked for progression against a variety of criteria including availability of the technology. One technique was selected for further investigation as the approach offered achievable ways forward within the scale of the project and offered potential as a tangible field device.

SKETCH EXPERIMENTS

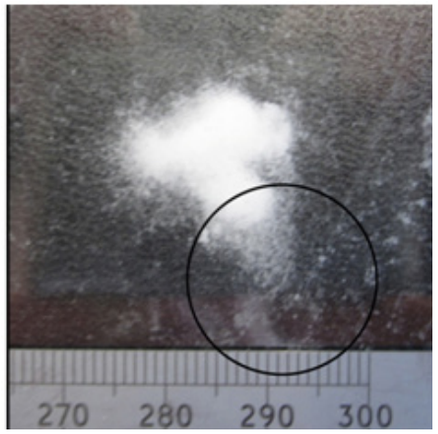


Figure 2.
First test resulting particulate distribution

The first test of the selected approach involved a dry MATRIX powder substitute. Observing the results of the sketch experiment showed more evenly distribute particles in some areas (circled, figure 2) than others. Questions these physical tests raised included; i.) Why does some of the material appear more evenly distributed in some areas than others?, ii.) What physical parameters might be modified to equalise distribution iii.) and, How much material is needed to efficiently coat a sample?

The sketch experiment showed that some of the particles were distributed in clumps, while others were more thinly distributed. Given all particles were held in the same condition at test start, it was determined something must happen during the process of distribution. A second, more controlled test was developed using a variety of techniques to capture a precise picture of how the particulates distributed during the process.

Besides evidence on which was the best design type in terms of expected performance (homogeneous distribution) the experiment pushed the scientists in the team to consider the importance of a reliable test-bed for future experiments. This led to a proposal for a more highly controllable, self-contained test rig.

SELF-CONTAINED TEST RIG

In the previous experiment a number of physical factors that influence particle distribution had been identified and a more sophisticated test rig that supports greater levels of control of each factor was built. The new test-bed allowed the experimenter to set specific values for a wide range of parameters including dose control, exposure time and sample variation.

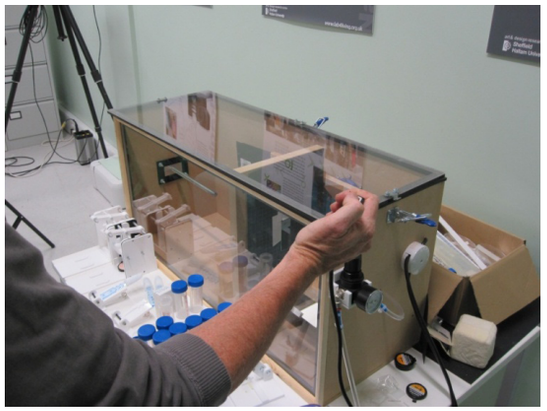


Figure 3.

Second generation test rig.

The rig was intended to be a tool to help the team to build knowledge about which parameters were more effective in a real-world case (when a device is used in the field) and to discover further factors affecting performance that may as yet be unknown. The rig proved highly effective in many areas, in particular in ascertaining what test parameters deposited MATRIX in the required ways, and how much material would be needed to achieve desired results. It came to be understood that the rig could have applications in its own right, in situations where consistent, reproducible micro particulate distributions may be required in a variety of lab based testing scenarios.

TESTING OUTCOMES

Two key factors needed to be established; the correct procedure and how to test outcomes. The tests were instrumental in answering questions on procedure, more precisely: 'by what physical means we might achieve homogeneous material deposition'. The second factor, how we understand if we have achieved homogeneous distribution, needed further reflection and a design step in terms of establishing optimal tools for the analysis task carried out by the scientists.

The rig had been designed to allow samples produced by it to be removed and therefore had already anticipated a step in which the experimenter would interrogate particle distribution quality. Each sample was imaged using an optical microscope at 40x and 400x magnifications and examined. A physical count of particulates was undertaken to eliminate obvious poor performers. However, it became difficult to form conclusions about other samples as such a large number of particulates were present.

Discussing the matter with the engineering researchers it was agreed that an algorithm may be written to perform automatic counts of the samples. This proved successful with data indicating particle count and particle distribution across the sample surface by looking at size and distance to nearest neighbour.

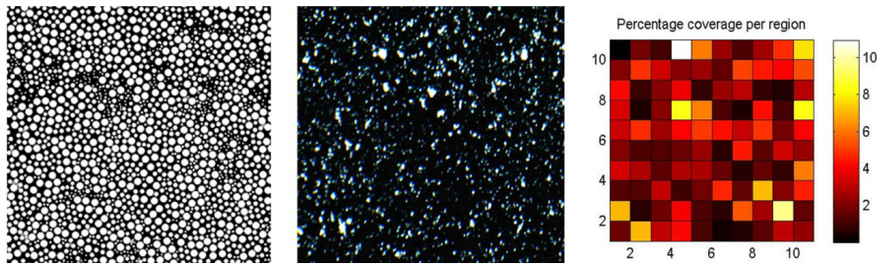


Figure 4a (left) Original target distribution graphic representation, (b centre) Actual example of 1mm square test sample (400 x optical image capture) and (c right) Visualization of the algorithmic analysis output.

The distribution characteristics identified in the target illustration (Fig. 4a) were run through the system to be used as golden standard target data set, that is to say to represent the ideal distribution of particles. The similarity between the hypothesised target distribution (golden standard) and the actual samples was very high proving that the device and the associated procedures had good performance.

REPEATABLE SAMPLE PRODUCTION

Tests with the second generation rig included depositing the MATRIX material onto sample fingerprints laid down by members of the project team. Subsequent analysis of these showed high levels of variation between sample sets and it was determined that this was in part a product of variability in the fingermarks themselves. It was important to eliminate this variability to assist with validating the science. Ways to produce consistent and repeatable fingerprints were investigated, not because that is what would be available in the 'real world', but to help benchmark, calibrate and validate the science. Indeed it is not the case that identically laid down fingerprints are encountered on real crime scenes. On the contrary, no two fingerprint examples are ever exactly the same, even when they are made by the same person (Fieldhouse 2011).

The production of fingerprint samples that were as closely matched to one another as possible presented the design team with a number of challenges. Following a series of experiments a simulated fingermark press rig was designed and produced. The rig included a synthetic fingerprint stamp to which sebaceous oil secretions (synthetic sweat) were applied in a controlled way. The stamp was inserted into the press rig with a receiving slide. A number of parameters including the amount of force applied and duration of the stamp operation against the receiving slide were controlled and repeatable (Figure 5).

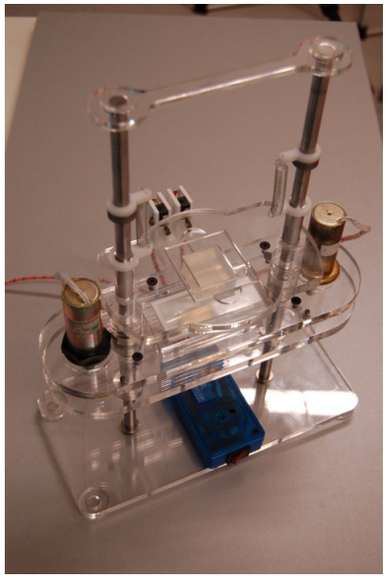


Figure 5.

The repeatable fingermark press rig.

The team achieved a reliable, repeatable method and system for the creation of simulated fingermarks, something not yet attempted in the scientific field and that has the potential of transforming that branch of forensic science research that deals with fingerprints. More specifically, where higher levels of consistent, reproducible simulated finger and other marks may be required in a variety of lab based test scenarios such as when developing and validating new techniques.

OUTCOMES

The interdisciplinary insight achieved in the project was directly translated to specify a concept field device. Based upon insight gained throughout the entire project the design team was able to further detail the specification which formed the basis of a successful intellectual property right application. This material and the physical prototypes developed during the course of the project were instrumental in communicating to industry technical aspects of the design and its commercial value. Aspects of the designs have since been licensed to a commercial partner.

Aspects of the study that can be reasonably expected to be within the original scope and remit of the research include;

• An enabling technology, proof of principal, test rig capable of informing various eventual device design operating ranges and technical specifications
• A novel concept device design showing the capability to deposit substances in the desired way and its enabling technologies (the subject of patent file number 1213065.4)

Across the whole project however, a number of further inventive steps, process innovations and discoveries where made including;

• Identification of the requirement in this field to produce samples of consistent quality for the purposes of scientific benchmarking and validation
• The development of a sample preparation process and protocol that complements 'dry wet', MALDI MSI analytical methods.
• An optical / algorithmic hybrid process to understanding micro particulate distribution.
• A particulate deposition test rig design showing potential as a form of lab test / sample preparation equipment in its own right.

• A sample preparation press rig showing potential as a new form of lab test / sample preparation equipment.
•Contribution to new academic knowledge in the field of forensic science.
•New intellectual property
•Commercial license agreements

The capability to repeat test procedures is a key aspect of scientific validation and consistent sample preparations form a part of that process. Prior to the creation of the press and test rigs, samples produced for testing did not show equivalent levels of repeatability control.

HOW DESIGN ENABLED THE SCIENCE

A number of factors in this project enabled it to reach and exceed its target objectives. These factors for success were due to the application of design methods and processes to scientific research that traditionally uses linear, less explorative approaches. This section of the paper discuses some key characteristics of the project that influenced and enabled inventive steps to occur.

PROJECT CHARACTERISTICS

Firstly, the project was primarily explorative in nature but within a very specific context. Design thinking in practice was included as a core component from the very beginning of the study. This facilitated degrees of freedom and scope for the project to expand from the original brief milestones to discover performance factors unknown at project outset.

Significantly, the design partners in this project delivered it in a 'research funded mode'. The design team, although design consultancy trained and experienced, were employed by and integral to the context and setting of the academic research institution and environment. Arguably, such an engagement with an external design house may have been less flexible due to the early stage (and nature) of the new product development. Often, in commercial consultancy models, freedom to explore and discover can be limited as boundary contractual, deliverable and financial variations (changes to agreed project cost, revised aims or changed objectives as result of new discoveries) impact upon project progress.

Design was acting as a co-investigative partner rather than a supplier. This places design in an equally empowered position with regard to project research methodologies and direction setting: "When involved earlier in the scientific research process, designers can challenge the research directions and support scientists in exploring, demonstrating and communicating potential future applications." (Driver, Peralta 2012) Design influence was not limited and the project evolved with design attitudes and perspectives embedded within it.

The Bioscience group, at Sheffield Hallam University, had innovated in a lab setting and successfully tested the hypothesis that MALDI MSI techniques could be applied to fingerprinting and forensic evidence capture. The question of origination is an important one because it firmly routes the research deeply within a disciplinary specific area. Interpretation of that deep disciplinary specific knowledge to allied disciplines required capabilities to work in interdisciplinary and multidisciplinary ways.

It is notable that significant levels of trust and willingness to explore and become more fluent in each field of expertise existed between the partner disciplines. Each discipline was open to learning from another about its methods, language, principles and practice. This was key to the achievement beyond the original expectations: "Knowing what you're good at and what you're not good at is one thing but ganging up with other people who really know the other things that you don't know is fantastic." (Seymour 2010) As the project progressed each partner became more fluent and more able to interpret issues and factors for resolution and therefore more creative and innovative as a group.

The steps taken in this project can be read as Research through Design (RtD) approaches but in the context of design practice (rather than research about or for design) "RtD allows researchers to rely on designedly activities as a way of approaching messy situations with unclear or even conflicting agendas" (Zimmerman 2010). The activity described in sections 2 and 3 are indeed 'designedly', the use of graphic communication and sketch prototypes are examples. It is suggested therefore that a further design research (practice) characteristic in this project was freedom to treat many forms of research practice appropriate toward its objectives.

DESIGN AS A HORIZNTAL DISIPLINE

The above cited project characteristics and approaches have enabled repeated inventive steps yielding innovations capable of directly transferring research results to industrial application. Indeed, the research outcome was already in a format that could be easily communicated to industry without requiring a further engineering step generally needed to take research results into a prototype form. However, these favourable settings do not always exist within many project development scenarios. The following makes the conceptual argument that we may need to change the way we see, undertake and deliver design within our academic institutions to enable us to capitalise more on scientific and other forms of academic research, as shown in this case study.

The well-known and major criticism put forward by design is that all too often design is called in toward the end of the product development cycle to resolve a production cost issue or to embellish: "Historically, design has been treated as a downstream step in the development process - the point where designers, who have played no earlier role in the substantive work of innovation, come along and put a beautiful wrapper around the idea" (Brown 2008). Where, as in many design consultancy based situations, design is 'treated as a downstream step', its usual role involves the delivery of a set of skills, the skill in form handling or the skill of CAD. In effect, this describes later stage engagement or 'service to' rather than development partner scenarios. In this project, design (product and industrial) has 'stepped out' of that usual role. Design is recognised as a multidisciplinary activity (Marsot 2004) and many designers possess a wide range of abilities and skills spanning a broad range of disciplines and thus gain insights from different perspectives (Brown 2008). As such, many designers are well practiced at switching in and out of another discipline's language, principles and practice. However, this is not the most common approach: there is an opportunity for designers to change their attitude and adopt a wide-spectrum approach that can 'widen their bandwidths' (Seymour 2010) of understanding and contribute to a number of disciplines. The ability of design to span across a number of disciplines offers the foundation for arguing that design in these settings should be seen as a horizontal discipline.

By contrast, it can be said that many other disciplines are narrow, they may be deeper in a specific knowledge area, but that can result in degrees of compartmentalisation. "Designers tackle problems from a variety of domains, and the products of their labour range from paperclips to airplanes. For example, while a biologist may

focus his or her life's scientific efforts on the narrow and highly specialised examination of butterfly coloration, an industrial designer may focus his or her efforts on the unique problems of the creation of a car, a guitar, and a chair within the span of a few months." (Boradkar 2010)

In Browns classic 'T shaped people' argument the vertical stroke of the 'T' represents such deep and highly disciplinary specific knowledge. Concepts such as 'wider bandwidths' and Browns 'T' are of course analogous, but taking browns principle of 'T' shaped people literally, where the vertical stoke describes the depth of knowledge held by scholars and scientists and the horizontal the individual's capacity to operate more broadly, then it is arguable that design resides more in the horizontal than the vertical because it's multidisciplinary by nature. Where this is the case design cannot always (reasonably) reach the depths of knowledge held by specialists over their discipline. For example, it may be too much of a stretch to expect designers to fully grasp the detailed intricacies of algorithm coding and mass spectrometry imaging.

In a horizontal manifestation design resides and regularly 'discipline hops' across the top strokes of many of Browns 'T's. Where we consider design in these ways, and in the described settings, it shows potential to help bridge the gaps between more vertical and compartmentalised disciplines, and, depending upon the depth of understanding of each, use design tools, methods and thinking to perform the role of interpreter between them. Design's further value, in this mode, is that it is ideally placed to then translate research outcomes to application, as this project has shown, through the licensing of intellectual property to industry.

CONCLUSIONS

Through a case study we showed that the involvement of design as an equal discipline in research helped and facilitated the project's success through interdisciplinary interpretations leading to translation of research to industrial application.

It is open to discussion whether the works described in this study do extend beyond normal expectations of industrial design / engineering practice. We argue that design is engaging differently here because although the scientists had defined the area of research, design was an integral part of further defining what and how we should be investigating toward both further scientific validation and practical realisation. In our case study design was a facilitator within scientific research and toward industry:

within research the designerly approach pushed toward a more focussed experimental setting by, for example, using graphical illustrations to define the goal or making prototypes to test potential concepts. This approach allowed design to materialize ideas and pushed the research much further than would happen with traditional methods. Other researchers have found a similar pattern: "In addition to the expected contribution of designers to support the commercialisation of technology, the cases demonstrated the potential for industrial design to have an impact on the research itself." (Driver and Peralta 2012)

Various levels of design thinking, practice and skill were applied in the course of the study to discover as well as resolve, and the design scope in this scenario required interdisciplinary approaches including the development of degrees of fluency in scientific languages to enable multidisciplinary conversations and design interpretations to take place. These in turn led to discoveries and innovations that have subsequently translated quickly to industry.

There is an on-going discussion in the UK on the role of universities and the importance of their research being translation to industry:, "The economic and social prosperity of the UK depends upon healthy, wealth-producing businesses. UK companies face challenges unparalleled in recent history... Never before has there been a greater need for innovation in product and service development..." (Wilson 2012) and, "The UK university sector is a national resource that has a central role to play in supporting UK business success in addressing these challenges." (Wilson 2012) The case study has shown that design is well placed to support these objectives when applied in academic settings. Design can be considered and capitalised upon as a 'horizontal' discipline (Marsot 2004), in particular when it is engaged in multidisciplinary projects and early on in innovation creation process. In the described environment design has demonstrated its capability to cross disciplinary boundaries and it uses a variety of tools to do so. Design can and has enhanced the research institutions capabilities when it is either embedded within the research institution or is given freedom to operate in partner and explorative modes.

Having the design team engaged in developing understandings of the science, processes and methodologies, and subsequently identifying, proposing and designing experimental solutions meant the design team were better informed about how an eventual product should perform. Involving the design team in the definition of research directions and experimental routes has yielded innovation that may not have otherwise occurred. It is not suggested that design has exclusive capability here,

simply that design may be adept as it has become used or more practiced at working in interdisciplinary ways than many other disciplines.

ACKOWLEGEMENTS

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HOW DO WE RELATE TO UNCONVENTIONAL ARTIFACTS? DESIGNING WITH BIOLOGICAL GENERATIVE SYSTEMS AIMED AT CUSTOMIZATION.

Raul Pinto
University of Aveiro. Portugal
Miguel Carvalhais
Faculty of Fine Arts, University of Porto. Portugal
Paul Atkinson
Sheffield Hallam University. United Kingdom
Miguel Vieira
University of Aveiro. Portugal

ABSTRACT

With the production of artifacts with biological systems with generative potential, where nature's randomness and physiological processes have an important role in the definition of form, we understand that artifacts do not only need to attend to the needs and desires of their users, but also have the capacity to foster emotional connections that arise from their nurturing and from an understanding of their morphogenesis, from the proximity and time required for their growth and development.
These artifacts will only develop into final products if the system is understood and nourished by their users. Their end results are singular and unique, with aesthetic qualities that arise from the understanding of the artifacts' growth constraints and the bonds that are created with them. The traditional quality canons of mass produced goods are challenged, as the resulting artifacts will not get final shapes that are both polished and free of imperfections, but that are inconstant, gnarly and sinuous. Other aspects, such as production

time and the dedication that the systems require from their user are motive to question the connections that will arise between users and these artifacts.
We intend to contribute to the discussion about new production models that may be alternatives to mass production in specific uses. With these systems we seek to catalyze greater empathy between objects and their users, to understand which aesthetic qualities emerge and how their specific characteristics are interpreted.
Geometrically simple experimental models with ants, bees and mycelia (the vegetative part of a fungus, consisting of a network of fine white filaments), have been developed to better understand the conjectural elements of these systems. In these, the matrices and the system are designed but the final results are reliant on the choices of those who manipulate them and by the variables of the biological actuators. We intend to make our findings available, allowing others to replicate our experiments in order to obtain a broader understanding of reactions on the interaction with the systems and the perceived quality of the final artifacts.
To better understand how individuals respond to this type of objects, we are developing small series of artifacts, made with mycelia, in an embryonic stage. These will be distributed to users that will be asked to nurture them into final objects; in this process each user will be asked to nurture his artifact into a final object, where all options will be of their choice, from the sunlight exposure to the interruption of growth. Each user will be asked to register the daily evolution of their artifact and to describe their feelings towards it.

KEYWORDS
Biological Design; Generative; Customization; Open Source; Random; Gnarl

INTRODUCTION

When proposing artifacts manufactured using systems where you have a biological actuator with an active role in defining the final form, most of the canons that define the traditional user-artifact relationship are called into question.
Ants, bees and mycelia were the chosen natural actuators used in our experimental models. With these systems we intend to enhance the production of artifacts that have been designed not only to attend to the needs and desires of their users, but also with the capacity to foster emotional connections that arise of their nurturing and by the understanding of their morphogenesis (Dewey, 2005). Due to the openness and the generative potential of these systems, the role of the designer is not only focused on giving form but on informing (i.e., the designer does not conceive the artifact's final shape, but rather focuses on the system that will produce it later). The final product is the result of the actions of various actors: the designer who developed the system, the one who manipulates the system and the actuators that ultimately define it.
The system will only grow into a final product if it is understood and nourished. The user will have to expend time and effort so that the system may be nourished and can evolve from the initial template into something else. Because the end result is mainly defined by the biological actuator's needs and their adaptation to the new environment and not only by the designer or the user, singularity and uniqueness are guaranteed; it can also mean it may not meet the initial expectations. The aim is that the end product is more than a mere physical object resulting in products that evolve into strong emotional relationships between people and their stuff.
To better understand how individuals respond to these objects, we are developing a small series of artifacts made with mushroom mycelia that will be distributed in an embryonic stage to a group of users; the chosen user group is formed by people that have already had contact with commercial growing mushrooms kits. Each user will be asked to nurture their artifact into a final object following basic commercial mushroom farming kit instructions , where all options will be of their choice, from the sunlight exposure to its growth interruption. Each user will be asked to register the environment surrounding the system, the daily evolution of the artifact and to describe their emotional connection towards it when they feel there is a meaningful reason to do so. We expect this survey to help understand the gap between expectations and outcomes and if there is a place in the market for these unconventional artifacts, overall we intend to contribute to the discussion about new production models that may be alternatives to mass production.

CONTEXT

Generative or semi-generative biological systems are presented as tools which enable one to design and produce for individualization, not in the sense that they are tailor-made but because they are unique, user dependent and uncopiable, with a strong emotional bond to their caretaker. Variables like randomness, the production time, growth context and especially the natural functions of the biological actuators are cherished and allow us to grow unconventional objects. We intend with this to provoke new ways of relating to our things, questioning the standardization seen in mass production, as stated by Deyan Sudjic in The Language of Things: "the role of the designer when working for the industry is more than the one who conceives the form of things, it is to think out the interaction between people and the artificial world, and in particular how we become attached or not to things". (2009)
The question is how these artifacts and their production systems will be perceived, and if there is a place for this time consuming, rugged, fragile, low-tech artifacts.
In The Meaning of Things, Domestic Symbols and the Self, Mihaly Csíkszentmihályi, affirms that to most people, plants are one of the most cherished possessions in the household, he affirms that this happens due to the "slow, growth-producing nurturance and life-giving concern", we can also add that because a plant is a living thing with a will of its own, we tend to look at them differently than we do unanimated objects. He continues with the idea that to cultivate something generates a strong bond between the cultivator and the cultivated.
Cultivation involves both senses of the verb "to send": to take care of or watch over ("she tends her plants regularly"), in other words, "to attend to"; and also to proceed or be directed on some course or inclination ("he tends to find the right way"), that is, "to intend" some aim. Indeed cultivation – the improvement, development, refinement, or resultant expression of some object or habit of life due to care, training, or inquiry – comes closest to the original meaning of the term culture, although most contemporary theories of culture exclude this aspect in favor of rather static "symbol system" approach... Our view, by contrast, is to see nature and culture on a continuum, so that culture, or cultivation, is the completion of nature. When a person cultivates a habit of tending plants, for example, both the nature of that plant and the nature of that person can be enhanced by the transaction. The meaning of the object, then, becomes realized in the activity of interaction and in the direction or purpose that this activity indicates: physical and psychological growth. (Csikszentmihalyi and Halton, p. 173)
Csíkszentmihályi also sustains that there are three main attributes that people normally recognize as value adding: rarity, cost and age, "There are many ways in which a given object may became a symbol of status. To qualify as a status symbol, the

object might, for instance, be rare. Rarity implies that a thing is difficult to obtain, and therefore it takes a large investment of psychic activity to make or to find ... An object that is expensive functions essentially the same way. In fact rarity and expense are by the large synonymous, because both terms refer to the amount of attention required to make a thing. The age of an object also enhances its status" (Csikszentmihalyi and Halton, 1981). Especially in fragile things like fine china.
Being the final result of a generative process conditioned by biological actuators while filling their physiological needs, we will not get a final shape polished and free of imperfections, but one that is inconstant, gnarly and sinuous. Leonard Koren, in his book Wabi-Sabi for Artists, Designers, Poets & Philosophers, shows imperfection, impermanence and unfinished features as enriching and with the capacity to generate beauty (1994). Paul A. Fishwick on Aesthetic Computing (2006) argues that aesthetic considerations are primarily related to experience and Christopher Alexander in The Nature of Order – The Phenomenon of Life (2002), presents industrial processes and rules that command them as unable by themselves of producing artifacts holders of "true" order and the consequent beauty that comes with it. The Japanese art of Kintsugi, which means "golden joinery," considers great beauty in the scars of fixed porcelain emphasizing them with gold welding.
Besides all the above considerations, we understand that the outcomes of these systems may not be perceived as having the traditional attributes that are connoted to quality products, one has to be connected to the artifact by the whole understanding of the process and not only simply by looking at its surface; as Donald Norman explains, "attractiveness is a visceral-level phenomenon – the response is entirely to the surface look of an object. Beauty comes from the reflective level. Beauty looks below the surface. Beauty comes from conscious reflection and experience. It is influenced by knowledge, learning and culture. Objects that are unattractive on the surface can give pleasure. Discordant music, for example, can be beautiful. Ugly art can be beautiful." ... "The problem is that we still let logic make decisions for us, even though our emotions are telling us otherwise. Business has come to be ruled by logical, rational decision makers, by business models and accountants, with no room for emotion. Pity!" (Norman, 2004)
With these systems we seek to catalyze greater empathy between objects and their users, because of the dependence and time consumption the systems have on the cultivator for their evolution and final conformation, this may translate into a more complex and rich emotional connection, and also we believe that the impermanence and "roughness" that outcomes from the actions of the biological agents will be perceived as elements that provide new aesthetic qualities (Carvalhais, 2010).

TESTING

To better understand how individuals respond to these objects, a small series of artifacts in an embryonic stage, made with mushroom are being developed to be distributed; we are designing a printable cast and the instructions for the correct transference of a commercial mushroom kit into the predefined form so others can repeat this process with ease. Dimensions will be constrained by the printing volume of an average low- cost 3D printer, and the initial user group will be people with some experience with commercial mushroom growing kits, the choice of this user group guarantees some familiarity with the nurturing process and can give us an emotional comparison between a traditional commercial kit with the only focus on producing edible mushrooms and the possibility of giving the substrate a second use.
Each user will be asked to nurture his artifact into a final object, for this they will have to follow the normal instructions of the familiar commercial kit. All options will be of their choice: sunlight exposure, room temperature, when and how much to water, growth interruption, etc. each user will be asked to make a written log of this options and a photographic register of the mycelia's expansion and mushroom growth and to describe their feelings towards it.
"Natural forms are continually modified during growth by their surroundings. Theoretically all the leaves of a single tree should be identical, but this could only happen if they were able to grow in surroundings completely devoid of outside influences and variations. All oranges should have an identical round shape. But in reality one grows in the shade and another in the sun, another in a narrow space between two branches, and they all turn out to be different. This diversity is a sign of life as it is actually lived. The internal structures adapt themselves and give birth to many diverse forms, all of the same family but different." (Munari, 2008, p. 167)
For this reason the system and the initial template will be design, leaving most of the growth constrains for the user, we believe that a greater consciences that his or hers actions helped define the final object, will also generate a greater tie-in between user and object, a connection by emotion and understanding more than the mere relationship of possession.

CONCLUSIONS

We propose biological systems with generative potential, where variables such as randomness, the production time, growth context and especially the natural functions of the biological actuators are valued and allow the production of individual,

unconventional artefacts. The intention is that these systems contribute to a better understanding of how we relate to our things and to if traditional production models can and should be questioned.
In the same way we can say that when a plant grows is also responding to its grower, and that this creates unique bonds that are different from those common between people and their inanimated things, we look forward to the idea that these systems will catalyze greater empathy between objects and their users although they are not living artifacts themselves but the result of a living system. Testing these systems will allow us to better understand how users react to these unconventional artifacts, and if they are an alternative to specific uses.
Finding of the tests presented and the templates along with instructions for their replication will be made public, allowing the testing to continuo into a larger data gathering.

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FASHION

MODA

FASHION AND ENVIROMENT. A REFLECTION FOR RESPONSIBLE FASHION DESIGN

Giovanni Maria Conti
Dipartimento INDACO
Politecnico di Milano

ABSTRACT

The debate on the theme of design1 and innovation has always induced reflection and investigation.
In "Questions of Method" Sartre observes that the person produces the garment, which means that he or she expresses himself or herself through it. In this way, the garment magically produces the person: by transforming the garment, one transforms the body.
In current situation, the "system" of fashion, or rather that set of skills and activities that characterized Italian fashion has taken on new forms over time. Fashion, Eleonora Fiorani2 writes, is the form of contemporary culture, in its ability to fit into the dynamic individual / company. It is precisely the relationship between the individual / socio-economic system / product that has changed.
Which are the changes? What are they due to?
It's important to emphasize the risk of a "sustainable fashion" understood as a pure virtuosity ethical expedient method to increase sales and to get a clear conscience.
Innovations move purely functional objects on a new plan, operating a radical step forward. The redesign changes the relationship between people and objects. In the fashion industry, the revolutionary concept of A Piece of Clothes (APOC), launched for the first time by Issey Miyake and Dai Fujiwara in 1999, creates clothes that are almost finished after the weaver or the knitting machine. Designed to reduce the waste of fabric, garments need seams and minimal finishes. This process eliminates the need to test fabrics and garments

can be made on request, thus reducing also the space for storage. This concept is unique in fashion and represents a rethinking of fashion through the creative development of manufacturing technology.
Objects' Life (creative genesis, production, durability, processing and disposal) is an integral part of the environmental system and, as such, the result of design solutions that have to program the system of production, in this sense we can say that in recent years and with the evolution of technology, many tools have become available by introducing new parameters and production systems and complex cross. But the improvement project can not merely be an extension of the options, the project must take on new ways of 'being", new development opportunities and new fields of activity on which to apply creativity to build objects whose added value is not the price but the way in which it was created.
The alternation of fast fashion is no longer a scandal compared to the rapid depletion of resources, but rather becomes the "pretext" to create something new, the product life is extended, by its own properties determine the continuous re- project.
The paper aims to investigate the perspectives, current and future scenarios according to the design-oriented design, whose purpose is to ready - (re) made: rethinking fashionable object considering the whole cycle of life as a resource. A change in the way of understanding the goods which are no longer disposable items, but objects with a history and potential that should be exploited.
Besides the primary use granted by the designer, the object will depend on many others who are assigned by the requirement, culture and experience of its owner.

KEYWORDS
Design, Fashion, "Eco", Sustainable, Product.

INTRODUCTION

In "Questions of Method" Sartre observed that the person produces the garment, in the sense that he or she expresses himself or herself through it. In this way the garment magically produces the person: by transforming the garment, one transforms the body.

By the expression "economically responsible behaviour" we mean an increasingly widespread tendency for consumers, and partly also companies, to consider the consequences of their behaviour on the market, especially consumption-related behaviour, which nowadays goes beyond being just the outcome of and reward for a given working process. It is important to note how, although in theory individuals should always act functionally with a view to optimising costs and benefits, in practice people buy and utilise items according to criteria that are not altogether rational, both in meeting primary needs for material survival, and when satisfying other requirements. In so many everyday life situations rationality is systematically left out of the equation: one would expect the consumer always to opt for the most economical alternative but, inexplicably, it does not always do so.

One explanation can be advanced from the observation that choosing and using commodities is not only a way of satisfying physical or psychological necessities. It also involves other dimensions, among which communication particularly stands out. Consumption is indeed a communication device which we habitually use when embarking on relations with other people, on a par with physical appearance and language. So the consumer actually makes a cultural move when choosing commodities; a move by which in practice he manages to define his vital world and at the same time expresses both his individual and social ethos.

In consumption we measure two fundamental human needs: the desire to be accepted and the aspiration that our uniqueness be acknowledged, dynamics that are not always easy to combine. Already at the end of the nineteenth century, Georg Simmel recognised in them the recurring forms of social living, and identified in fashion a fertile terrain for their combination. In fact, the mechanism of fashion enables us to be both similar and different at the same time:

"The entire history of society unwinds in the struggle and compromise between fusion with the group and distinguishing ourselves as individuals. [...] Fashion is imitation of a given model and fulfils our need for social support, nonetheless it also fulfils our

need for diversity: the tendency to differentiate, change and stand out. [...] So fashion is none other than one of the many ways in which the tendencies towards social equality and individual differentiation and variation merge into a single way of behaving". 3

It is not by chance then that fashion and its associated consumption patterns can help us to understand some of the orientations emerging in contemporary society, just as they did in the age of Simmel.

Precisely because consumer goods increasingly represent a symbolic and communicative value, and are therefore able to express who we are and what we want, the emergence of responsible consumption reinforces the concept of multiple criteria spurring consumers in their purchasing options, driven not only by their need for material satisfaction but also for affective and value gratification.

Responsibility in consumption can be interpreted in three directions corresponding to three different types of commodity:

towards oneself: items for psycho-physical well being and personal happiness;

towards others: fair trade products that respect worker rights and exclude child labour;

towards the environment: organic and sustainable products, low environmental impact packaging.

In responsible consumption dynamics generally a virtuous circle is established between producer and purchaser, which is capable of conferring values like justice and solidarity to certain products. This synergy also allows for a certain subversion of current market logic, which is devoted to the blind pursuit of individual profit and unbridled wealth, creating a more sustainable lifestyle from a social and environmental point of view, through the offer of products and services, alternative not only in their material content but also in the correctness and transparency of their production and commercialisation. These commodities render all the transactions in the production chain visible (type of labour and materials used, costs, salaries, modes of distribution and sale, environmental impact, etc.).

This revolution started with fair trade, with products like coffee, tea and chocolate, and has expanded to highly diversified sectors including both tangible commodities and intangible services. The main issue at stake here is cultural:
responsible consumption seeks not only to produce economically important facts, but above all to influence the values of western society. It is no longer a question of selling responsible goods to a growing number of consumers, but to make the consumer's ethical choice a necessity.

However, it is important to stress that in the fashion sector too, different kinds of solidarity are increasingly gaining ground. They can be grouped into three categories on the basis of their main direction of responsibility:

1. Organic fashion: ecological sensitivity and eco-sustainability, environmental packaging, personal health and wellbeing

2. Solidarity fashion: sensitivity towards workers' rights and the exclusion of child labour, higher value afforded to local craft techniques, solidarity towards the socially disadvantaged

3. Second-hand fashion: sobriety, recycling, upcycling, anti-consumerism

Naturally, the complex ramifications of responsibility lead to a recurrent overlapping of the three categories which can be seen in products that incorporate more than one requisite.

Examples of responsible production and consumption have been mushrooming making the sector particularly effervescent and suggesting that the fashion world is not insensitive to responsibility as an "expression of what is most peculiar in the human soul: respect and care for one's fellows, values which can also be expressed through the garments we wear every day. In this perspective the expression "responsible fashion" is far from being a contradiction in terms, it acquires depth and seems to point to a new frontier in contemporary culture building"4.

THE PARADOX OF THE FASHION SYSTEM

The fashion industry can be many things to many people. The many facets of this sector show that we can relate to it in different ways and times. Unlike the past, fashion

nowadays is pluralistic: many different styles can be fashionable at the same time and normally with a rapid turnover.

The keywords of the old approach were status and wellbeing: fashion was for the elite and subsequently filtered slowly down to the masses, as described in George Simmel's classic 'trickle down theory' at the beginning of the twentieth century. Fashion has always been aspirational; today, fashion is even more tied to suggest an ideal, a desire and is based on a fundamental process of transformation.

Mass production arrived at the beginning of the twentieth century with the industrial revolution, powered looms, sewing machines, cutting machines, etc. (partly due to the need for uniforms) together with the first signs of fashion democratization.
More practical, yet still fashionable, clothes became available thanks above all to the American ready-to-wear industry. In the 1940s and 1950s, the American designer Clare McCardell introduced a new informal look which went under the name of "sportswear". Industrial clothes became increasingly popular and reached a growing number of working people.

The habit of making clothes at home gradually disappeared from the second half of the century onwards, when the youth revolution began to overturn the traditional social order (top downwards) and young designers like Pierre Cardin, Courreges and Mary Quant looked to a new future.

The great stylists remained the domain of the most privileged, but high fashion became less and less influential, to such an extent that the great French Fashion Houses started to launch their first prêt-a-porter lines. The consumer society began to emerge.

In the Seventies and Eighties fashion actually moved in the opposite direction appearing as a rebellion against fashion, in the guise of youth trends like punk and rock. These styles inspired great designers like Versace, Jean Paul Gaultier and Zandra Rhodes. Since the Sixties, the mass production of casual clothes (jeans, T-shirts and baseball caps) based on the casual American look has become a sort of uniform for youth culture.
The rigid seasonal diktats from magazines like Vogue and Tatler had to leave their place to emerging publications guided by this new look. Fashion was fragmenting: the rules were overturned and the barriers between high fashion and popular trends, great designers and everyday styles started to disappear.

In the Eighties, when consumerism reached its heights fashion parades became the symbol of an aspirational status.

This imprint was spread by a second luxury-democratizing wave during the Nineties, when aggressive marketing and massive expansion made brands accessible to more consumers.

Over the last 15 years fashion has become increasingly faster and cheaper. As well as increasing competition and industrial growth, global communication and marketing has fuelled demand and consumer expectations, constantly speeding up fashion cycles. However, this position is unsustainable for fashion, both in the medium and long term. Fashion production and consumption are the ends of an extremely long, complex, fragmented chain that transforms fibres and fabrics, which in turn are mediated by designers, industries and buyers into the clothing on sale in shops. There are problems to deal with at every stage of the process, long before the end-user chooses, wears, washes and finally throws away the product. As Catherine Hamnett says, "The way we consume shapes the future of the planet".
The recent interest in the relationship between fashion and sustainability is associated with the convergence of many different environmental and commercial factors, together with changing social and cultural norms. Fashion has always been a global affair; a quest for the unusual or exotic for its rarity and prestige.

The recent increase in goods arriving from abroad, especially China and India, is a direct result of the change in international trade agreements, altered in 2005, when the MFA (Multi-fibre Arrangement) and GATT (General Agreements on Trade and Tariffs) regulations already in force were integrated with an adjustment in international import-export quotas. Closed markets like the U.K. were previously protected against competition from very cheap imports (like those from China), but now these goods are able to invade the market, destroying the previous equilibrium.
Consequently many developing countries, like Bangladesh or Cambogia, have moved into the clothing market.

Although some regulatory quotas are still in use with regard to exportation, the new trade relations could prove difficult. For example, the so-called "Bra war" broke out in 2005: millions of garments made in China were blocked at European Customs, until China agreed not to export more pullovers, bras and trousers that year and to include half the blocked items in the quotas for the following year.

THE PARADOX OF FASHION

The clothing fabric sector is a highly significant economic player; as far as earnings are concerned, clothes are much cheaper now than they were a few decades ago. Clothing sales have risen by about 60% over the past 10 years.
According to research by Cambridge University, today we consume a third as many clothes again as we did four years ago and throw them away after wearing them very little, even only once. There has been an increase in the way garments and fashion are sold, with the advent of "value fashion" available in supermarkets, alongside food, and in high street chain stores, clothes that sell because of their low prices rather than for their potential to last. Cheap fashion means accessible fashion and encourages greater consumption, creating a vicious circle. More important, fast fashion puts pressure on the textile industries and their suppliers to raise their output, impacting on those at the bottom of the production chain and those who actually make the clothes.

In this context, many are the questions raised about the possibility of a sustainable fashion, since many are the elements involved and complex the sequence of events inherent in the production of our clothes and the fabrics that go to make them.
Some key issues:

How can fashion become more environmentally and ethically positive?

How can we slow fashion down?

How can consumers make a difference?

How can designers make a difference?

Can conflicting interests be reconciled in such a fast industry as fashion?

What ecological opportunities are available among fabrics?
What would the impact on the market be if everybody kept their clothes longer?

Is it possible to resolve the paradox between transitoriness and sustainability?

Obviously it is a difficult process, at least as long as the clothing fabric industries continue to sidestep sustainability related issues. However, the wave of criticism from more watchful consumers, and reporting on environmental problems and ethical

practices within the production chain have created a certain pressure, which has now speeded up reparatory action in many ready-to-wear companies such as H&M, Gap and M&S. There has been a fundamental change in behavior spurred by ethical consumption, by which consumers request more information about how, where and in what conditions their clothes are made. Dramatically passing the buck of company social responsibility, companies that were previously seen as the major cause of the environmental problem, as far as textile production, dyeing and manufacturing is concerned, are now becoming part of the solution. The pressure exerted for some time by small eco-companies and the propaganda from some organizations have taken hold and a new way of thinking is emerging at higher and higher levels, impacting on the whole production chain. Mass media interest in working conditions in the clothing industry has grown. Numerous interviews have been published about industries in the fashion sector and various covers have been dedicated to the problem of exploitation at work.

Almost all economics magazines and newspapers, from Vanity Fair to Business Week, have been publishing a green column since 2005.

But what steers fashion? We know that fashion is full of contradictions: it is ephemeral yet runs in cycles; it looks back to the past but constantly embraces novelty; it is an expression of personal identity but also of group membership; it can both be a way of drawing attention to ourselves and a collective experience, it exists for the few as a unique piece of tailoring, for the many as a mass product. On the other hand, making one's own clothes or making them unique, imitating the hippie trend if the seventies, with its handmade garments, has recently captured the attention of younger generations and is steadily gaining in popularity. The desire to be fashionable, continually changing and renewing one's look, is expressed in every area of contemporary lifestyles, creating excessive consumption and obsolescence. All this paradoxically fuels the industry on which millions of people depend, both in developed and developing countries: cotton farmers, textile workers, shop keepers For those who live below the poverty line in countries like China and Bangladesh, working in the clothing industry is often a better alternative to subsistence agriculture, even though wages may be no greater than the local minimum. Western consumers must realize that there are serious, complex ethical problems behind all our fashion purchases.
Against this background and the numerous meanings and interpretations of fashion, as a cultural, economic and social phenomenon, the concept of eco-fashion may look self-contradictory, in itself an oxymoron. The pioneering but brief wave of eco-fashion at the start of the nineties associated its archetypal natural, healthy image

with a fashion that does the environment good. Today's ecological fashions are based on a combination of ethical and ecological principles, innovation and a high level of aesthetic content. Clothes made of totally organic fibres, recycled vintage fabrics, products designed for a long life and less waste, all this contributes to determine a new wave of design that is changing the way clothes made out of sustainable resources are perceived: eco-fashion has become chic. Previous initiatives have prepared the way for further development in textile materials and there is more organisation, including certification and legislation on chemical products. Demand has risen and both designers and consumers nowadays have more possibilities of finding ecologically produced items.

In the present context of growing debate on the problems of global climate and environment, lack of energy and resources and ethical production, there is a new sensitivity according to which this unbridled consumption of faster fashion must slow down. We must remember that in any case companies in the clothing fabric sector are fundamental economic players; they have to respond to one in six of the world's work force, from fields to factories. The desire for novelty and a credible fashion status is deep-rooted in our psyche and the constantly changing fashion cycles that steer demand and fuel the market will never disappear and neither could they. It is therefore necessary to develop alternatives.

Buying things that have been made with greater consideration is a choice we are preparing to embrace, but other problems arise when business men have to face the impact of a drop in sales.

This therefore is the paradox of fashion: how can we reconcile the transitoriness and implicit obsolescence of constantly changing fashions with the imperative of sustainability and social justice, and the economic importance of the sector with the drastic decline in resources? How can we consume clothes in full awareness? Some pioneer companies like Katharine Hamnett, People Tree, Gossypium and Ciel have created and been developing an ecological philosophy since the Nineties, focusing particularly on the use of organic cotton and recycled materials. Today a plethora of smaller companies are emerging that are creating an alternative approach to the ecology problem in fashion, paying greater attention to style and content rather than the advertising message. These companies attract aware but capricious western consumers who now hold the last word in purchasing. Even if only a small number of these companies manage to survive in market terms, they can hugely influence the point under discussion; suffice it to look for example at the similar phenomenon in organic food sales.

Small firms raise awareness, stimulate demand and gather a growing number of consumers in their wake, until larger companies are forced to act. The great chains and multinationals, such as Nike, Gap or M&S, were first accused of non-ethical conduct in their production of clothing and accessories, but today they have embraced the imperative of traceability to find ethical and environmental solutions to the paradox. Such is the purchasing power and production of these enormous companies that even a tiny increase in the percentage of ethical-ecological resources used, such as including a portion of organic cotton in their fabrics, can make a huge difference. It is from here that the most fundamental and long-lasting changes in fashion must come. Eco-fashion must aspire to becoming the norm, not the exception, and this requires re-examining all the principles and processes of clothing production, design and sale. If consumers become aware of the problem and are offered an alternative that meets acceptable ethical and ecological standards, they can exercise an enormous influence for this positive change.

THE EVOLUTION OF ECO-FASHION

Ecologist movements in the fashion field have taken various turns in the last thirty years:

- in the Seventies, as part of the hippie movement, when the ecologist movement was seen more than anything else as being anti-fashion. It was characterised by its exclusion from mainstream commercial activities to make way for an alternative lifestyle where fabrics and homemade, ethnic or craft clothes were the norm. A modern incarnation of this type of ecological fashion, which used fabrics like hemp and natural colourings, can be seen in the new age community or other alternative movements.

- in the Nineties, when a second, much more commercial wave of eco-fashion appeared; one of its most important representatives was Esprit, a company set up in the sixties based in San Francisco (cradle of the hippie culture) and sensitive to ecological problems. In 1994 the company launched Ecollection, designed by Lynda Grose (who is still an activist). In those years there were a considerable number of eco-activists in California, and clothing companies like Patagonia and J Crewe had already started to develop ecology-sensitive ranges. In June 1994, the British fashion magazine Drapers Record enclosed a special enquiry on "Going Green", highlighting the eco-lines (mainly T-shirts) available in shops like Next and H&M. In the same period European provisions were enacted regulating the disposal of wastewater from dyeing indus-

tries; this was a worrying issue because of the increase in cost involved. However, the concept of eco-fashion was still an oxymoron 5 years later. In January 1999, The Independent newspaper published an article on young, emerging stylists of ecological clothing in which it said, "Is it possible to be both fashionable and environmentally friendly? Environmentalism is still associated with the "new age" look of the early Nineties, with natural hemp and wooden love beads, or with the traveller trends of dreadlocks, combat gear and Peruvian sweaters.

- the new millennium has seen the start up of many small, ecologically and ethically driven fashion businesses and the debate has ballooned. A series of exhibitions all over the world have also markedly heightened awareness of the problem, especially among the younger generations, triggering a massive increase in press and publicity for the cause. However, in the long term the greatest commercial impact will come from the difference that the purchasing power and economic standing of the great fashion houses and design companies will make with their decisions and value chains. Consumers and designers today are faced with an amazing range of labels and terminology. Words like "sustainable", "organic", "green", "fair trade", "ethical", "eco", "bio" and "environmental" must be understandable to enable consumers to make comparisons and informed choices. Purchase decisions in the fashion sector are usually guided more by fancy than necessity and we all know that in western wardrobes there are far more clothes than we need.

If sustainability principles are innate to man, clothes too must be less harmful for the environment yet still attractive to consumers. We have to achieve a balance between the various factors operating on the market so that clothes can reacquire some of their durability value (as if they were mementos for the future) and be thrown away. The role of the design and aesthetics factor is crucial in this context, because purchase decisions are initially driven by the appearance of the product and its fashion content, not by its positive credentials. This new conception of design is increasingly fundamental in the fashion sector. Consumers demand highly fashionable products, but also that they are, at least superficially, made according to ethical and environmental principles, as a new standard of added value. There are many good examples of this approach, but we are still far from design maturity, especially in the middle market and designer field.

If a company introduces an ecological collection, what impact will it have on its other lines? There are many decisional elements that come into the designing process, e.g. choice of materials, performance and length of life, aesthetics, manufacturing and

maintenance, as well as cost restrictions, both whether they are made to measure, handmade or made in small quantities, or whether they are produced industrially for a mass market. The crucial point in overcoming this paradox lies in informing and helping people to understand the complexities that lie behind the fashion sector and how each one can make its contribution.

A NEW CONCEPTION OF DESIGNING

The fashion business is often totally unpredictable: months ahead of sales, consumer trends must be predicted and interpreted by designers and buyers. The traditional clothing fabric chain includes many levels: transforming fibre and fabric (including dyeing and finishing), designing, acquiring raw materials, sample production, purchasing by buyers, production, shipping, marketing and end sales.
Fashion buyers play a hidden but fundamental role in selecting and directing the styles that appear in the shops. Industrial products must be ordered in advance and the very nature of fashion makes this operation speculative. Actual sales are uncertain, with massive fluctuations due to fashion cycles, the influence of trends and even the volatile seasonal factor. On top of this buyers are subject to commercial pressures and try to keep their sales as near as possible to their seasonal needs, but at the same time responding to last minute trends.

The industry provides seasonal work, which may not be offered the following season, because those dealing with supplies usually look around for the best price and delivery times for each order. In this way it is not possible to guarantee workers continual employment from season to season. Decisions made at high levels may also affect production, an issue now recognized by multinationals like Gap.

Beyond this volatility, fashion lifecycles are intrinsically polluting, for example many items remain unsold even after being put into the sales at cut price. Waste is produced both before and after product consumption and what remains in stock is sold through minor sales channels (outlets or discount stores), burned, taken to landfill or sold off in developing countries through charity organizations. Over a million tonnes of clothing and fabric (including furnishing material) are eliminated annually in Great Britain, 70% of which are thrown into landfill even though at least half of it could be reused.
A more sustainable approach to fashion design must consider the entire life cycle,

including every stage from sourcing to production, consumption and disposal. Issues to be re-examined and addressed through changes great and small, and sometimes radical, include three macro-areas:

PRODUCT DESIGN AND DEVELOPMENT

Selection and combination of fibres and materials.

Waste reduction (materials and energy).

Environmental impact of dye pollution and water and energy use. Reuse and recycling possibilities. Whole life cycle design.

Intelligent, aesthetically pleasing solutions. Use of new technology.

PRODUCTION AND MANUFACTURING

Localising global resources, and international trade agreements. Increase in competition and fast fashion.

Ethical supply chains, vetting and legislation.

Codes of conduct and integrated management of the production chain. Value of money and efficiency.

PROFIT AND INVESTMENT IN RESEARCH

Relationships with consumers.

Environmental and ethical education.

Communication and transparency.

Traceability in the production chain.

Social responsibility and fairness.

Each one of these areas is intrinsically very complex and needs to be broken down

into small components and combined with possible sustainabilityoriented solutions and new approaches. Over the past couple of decades issues like green design, design for sustainability, design for the environment and eco-design have been widely discussed and investigated, but this literature has always focused on the product and rarely touched on the fashion factor in depth. By contrast, the aim must be to highlight the interdependence of the various aspects of the fashion sector, a world that includes clothes, shoes and accessories but also incorporates aesthetics, lifestyles and the artificial environment.

REDESIGNING FASHION

Product design determines the way in which everything around us works, appears and seems, from the humblest of objects to highly engineered tools. Innovations move purely functional objects to a new plane, making a radical step ahead. Redesigning changes the relationship of an object with a person. In the fashion sector, the revolutionary concept of A Piece of Clothes (APOC), launched for the first time by Issey Miyake and Dai Fujiwara in 1999, creates clothes that are practically finished when they come off the loom or knitting machine. Designed to reduce fabric waste, the garments require minimal sewing and finishing. This process eliminates the need to use trial fabric and clothes can be made to order, thus reducing warehouse space. This concept is unique in the fashion industry and represents a rethinking of fashion through the creative development of manufacturing technology. And it also represent a rethinking of the relationship between designer and consumer.
Over the past few decades, sustainable propositions (longer lasting commodities, less energy wastage, recycled materials) have been gradually becoming part of contemporary architecture and design. In spite of this the same approach has not yet been automatically and fully applied to the fashion field which, though a form of product development, has to reckon with constant change. Clothes must be functional, suitable for their market and purpose, available in a wide range of sizes, washable or dry cleanable and must also remain in a cost range determined by the market. At the same time, the novelty and originality of fashion must continue to give pleasure and trigger desire. There is an infinite variety of styles, sizes, shapes and fabrics and no absolute values, just a few timeless “classics” that remain constant in spite of the periodic stimuli that drive fashion ahead.

There is a distinct polarity between the more influential, radical fashion designers and the companies pioneering in the sustainability field. Avant-garde designers like

Miyake, Comme de Garcons, Yamamoto, Margiela and Hussein Chalayan are creating the main thrust towards rethinking fashion, inventing new body proportions, often using new materials, technology and processes. On the other hand, small innovative companies are generally less interested in changing fashion as such, and are keener on ecology or ethical production, especially using organic fibres. Global labels like Nike, Gap and Timberland and chain stores like M&S are now starting to propose ethical products for the mass market. However there are still numerous companies that do not yet see sustainability as a problem to be dealt with. Given the convergence of environmental problems with those of social justice, it is no longer possible to ignore the need to completely rethink our relationship with clothes and how we can design fashion. Many companies are beginning to wonder what they could do. There are huge barriers to overcome, especially the cost involved in setting up new plants and a supply chain for new materials, closer production chain monitoring, continuous updating and closer contact between all players in the chain. All this lays the base for new challenges in the fashion field and helps to resolve the paradox of consumption, trade and sustainability.

THE ROLE OF DESIGN AND DESIGNERS

The Cox Review of Creativity in Business, December 2005, defined design as "what links creativity and innovation.
It shapes ideas to become practical and attractive propositions for users or customers. Design may be described as creativity deployed to a specific end".5 Basically we can look at human creativity as the ultimate economic resource.
The capacity to turn out new ideas and better approaches to things is ultimately what increases productivity and therefore standards of living.
Many design theorists, whether innovative collaborators in design or responsible consumers, have proposed radical ideas about how we must rethink design with a more holistic approach, bearing in mind the entire context in which design works.
The sustainable design theorist Ezio Manzini supports the conception of an emerging design network in which "everybody designs" including single individuals, businesses, non-profit organisations, and local and global institutions. Michael Braungart and William McDonough, respectively chemist and designer, have developed the idea of "cradle-to-cradle" design where, at the end of its life, the product becomes an ingredient for new products: an "up- cycling" rather than "re-cycling" or "down-cycling".
They have also radically rethought certain design solutions, creating new systems that enable the development of "good design" rather than just "least harmful design".

Droog Design is a German group known for its radical design that, often ironically, overturns and transforms existing, conventional design projects. Currently these designers are moving away from the creation of single products towards integrated system and service design. New ways of living and consuming are being put forward. The slow-design movement headed by Alistair Fuad-Luke, author of The Eco-Design Handbook, has taken a leap forward, helped by its similarity with the slow-food idea, which promotes experience rather than speed to generate well-being. Sadly, too little attention has so far been paid to the ecological issue in the fashion field, though the first publications are starting to appear such as Kate Fletcher's book Sustainable Fashion and Textiles.

Can the paradox of "slow fashion" become a new reality? Both consumers and the new generation of designers will have to commit to being catalysts of new stimuli and implement different approaches to designing. The crisis we find ourselves in is not simply a series of problems with a single answer. The circumstances are extremely complex and many different strategies can simultaneously lead to a solution. Some of the ways that fashion can do its part have already been put in motion, but this is only the beginning of what must become conventional behaviour, because this time ecological fashion cannot merely be a transitory stage.
Since they are fundamental drivers in consumer and designer behaviour, production and economic processes have become essential for survival, though this could be a difficult path.

A new model of behaviour means there is no going back. Emotional involvement may help: there are many advocates of new approaches to human progress, other than the capitalist-Fordist economy of industrial growth, which hold happiness, personal satisfaction and sustainability to be part of the final result of economic accounting.

The role of designer bears ethical and ecological implications, in that it carries crucial responsibilities for the choice of materials and technology, and is currently changing to embrace wider issues of sustainable production and technology.

As already stated, even small changes towards the use of more ecological materials and processes may have a high impact if made by large companies, because of the level of operations they are working at and their purchasing power.
Choices made by fashion designers and buyers may positively influence future production and trade.

Creative people also play an emerging role, that of recognising new opportunities by looking at things from a new approach. Design is becoming increasingly important for business and has been significantly repositioned within organisations. Designers are able to bring together materials, technology and innovative processes and collaborate in the creation of a product, co-ordinating different disciplines in a shared task. Can better design induce more consumers to buy ethical and ecological products? Can sustainable fashion be conciliated with the economic reality of the sector's traditional commerce, or is it destined to serve only a niche market, itself subject to the whimsies of fashion?

There are new ways of looking at clothes where design combines new technology with innovative materials and processes, and it is very possible that more sustainable products will be developed that will have a strong impact on the fashion industry, now and in the future. It is a cultural issue: designers can change the mental attitude of consumers and the market, which sees the economic problem as a limit rather than an opportunity.

THE LIFE CYCLE OF CLOTHES

It often happens in our contemporary consumer society, which apparently offers infinite possibilities, that we know nothing of a garment's origins. We think it is "born" in the shop, has its moment of glory and is then thrown away. As Braungart and McDonough suggest, the fault in this way of thinking is that there is no "way". Objects do not dematerialize. Clothes, sweaters and trousers are the products of a long chain of events, a "cradle-to-grave" lifecycle: production of fibres and textiles, design, creation and distribution throughout the world in sales channels, then after purchase, they are washed in the washing machine or dry cleaned and discarded: bin or charity. The resting place of our garment may be somebody else's wardrobe anywhere on the planet, the market of the developing world, a landfill site or an incinerator, each of which entails further environmental consequences.

Even though it is widely accepted that the greatest environmental impact of a product comes from the materials and the production process, recent research has shown a different outcome for clothes. Looking at the production of carbon dioxide and energy consumption it emerged that the greatest impact on the environment of an ordinary item of clothing like a T-shirt comes from washing and maintenance (which requires that it be washed, dried and ironed), rather than from materials, production and distribution. How can we reduce this impact?

On average, underwear or garments in direct contact with the skin are washed 30 times (a figure used in laboratory tests) and the energy consumed obviously depends on the water temperature and whether it is dried in the sun or in the dryer. According to the research, if a T-shirt is washed 25 times at 60°, spun and ironed, the energy required is 65% of the total energy, far more than that required for materials and transport. In recent decades consumers have reduced washing temperatures, particularly due to the increase in artificial fibres, and there is a notable reduction in the use of boiling water. On the other hand, things are washed more frequently and often the washing machine is used just to freshen them up, not to get them clean. So, the combination of fewer washes at lower temperatures with natural drying can significantly reduce the energy impact of our clothes. Undoubtedly fashion can help at times, for example the trend in the early nineties for crumpled clothes definitely reduced energy consumption in that period.

Dry cleaning has a different kind of impact, mainly due to the emissions and residues of solvents and the energy used.

The most commonly used solvent is perchloroethylene, which may be carcinogenic if handled in uncontrolled systems and closed cycles. Green chemical components are being developed and used in various processes such as those based on liquid carbon dioxide or using liquid silicon and an ultrasound washing system. Ironically, one of the ways explored to reduce toxic emissions is based on a "wet" dry process with controlled use of water.

Designers must consider how the fibres in their products will stand up to wear and maintenance, especially if special finishes or a number of different fabrics are used. Traditionally design has stopped here, while responsibility for the garment and how it was to be discarded fell to the consumer. This approach began to change when we became more aware of the end-of-life impact of the product. Recent European legislation restricting the use of landfill has helped raise awareness of waste in fabrics and thrown away clothes. New approaches to design are emerging, some of which can be seen in this book. These consider the end-of-life or second life of our garments and together with a more ecological choice of materials they may help to alleviate the waste problem in the clothing sector.

PAST, PRESENT AND FUTURE

In the past, the massive presence of detergent foam and colorants in rivers was a clear sign of the extreme pollution caused by the textile industry. Since the Nineties, new laws have been introduced to protect the environment, especially from the negative effects of waste production and emissions in waste water. These have brought improvements to the landscape. The European Union has recently forbidden the use of certain chemical compounds and in 2004 the World Health Organisation classified pesticides used in agriculture and cotton growing, highlighting their risks. New, more efficient dyeing methods have also been developed that use less water.

On the sales front the approach to tackling environmental problems has been much slower. For at least 20 years the behaviour of many eco-pioneers, working with fibre producers and manufacturing companies, has been passionately pointing to change. Their uncompromising convictions have proved correct, to the extent that the urgency for change has reached the highest levels of the fashion business. Ethics and sustainability have become so important that they have become a fundamental part of our daily life and urge a drastic change in our behaviour, although it is very difficult in a consumer society like the western one, where nobody is prepared to give up their standard of living. For this reason it is necessary to adopt a series of far reaching strategies at design and production level, so that consumers make the difference through their purchases even without being aware of it.

Such strategies do not include only the area of post-production and sales (reduce, recycle, reuse), but also all that precedes production, so as to obtain higher quality, longer lasting products with a lower substitution rate, eliminating built-in obsolescence. This will necessarily lead to a rise in clothing prices that reflects their real value and encourages lower consumption.

The quality and long life of clothes bearing the great fashion labels may in some way incarnate this concept, at times to excess but always with high aesthetic and creative value. Superior design values are fundamental to cultivating long-lasting relationships with clothes and even after they have gone out of fashion, well-designed and well-kept clothes often acquire a special feel, an added value and aura of respect, as in vintage fashion, and as the years pass they become desirable again. The costume historian James Laver said that after about 150 years a fashion will return, in a cycle that makes it first indecent, then daring, elegant, dowdy, horrible, interesting, bizarre, glamorous, romantic and finally beautiful. The trend for vintage, popular in the Nine-

ties and recognised as a fashion when celebrities in search of a personality started to wear unique pieces from earlier époques, seems to confirm this theory with a postmodern twist that speeds it up. In this sense the life of fashion garments has been lengthened. Other systems and future strategies have been proposed for the fashion sector. For example clothing hire, already in use for formal clothes, or the exchange and loan of high fashion items that takes place through websites like “Bag, Borrow or Steal” and “KeepandShare”.

THE IMPACT OF DESIGN ON LIFE CYCLE OF GARMENT

Design is basically what attracts us to fashion. What makes it attractive is the combination of colour, texture, feel of the fabric, style and volume of the garment, together with how it makes us feel and appear when we wear it. Often what we see immediately is nothing more than a sleeve on a hanger, but it is something that attracts our attention.

Ecological fashion must have the same qualities to meet our desires and delight us with its aesthetic and sustainable content. For the concept of ecological to become elegant, design must create garments that satisfy all the qualities that we are looking for and at the same time happen to be well-thought up and meet one or two of the criteria for environmental and ethical sustainability. Designers and companies have had various approaches to the eco-fashion problem, each one of which represents one of the possible strategies for positive change that are often used together.

ORGANIC FABRICS

As previously stated, the big problem of the agro-chemical sector together with the importance of small scale cultivations in meeting the world demand for cotton have obliged a number of companies to a more careful monitoring of fibre supply chains in order to achieve total transparency for the resources used in every garment. Many companies have begun to introduce various organic materials in their fashion collections.

REUSE AND REDESIGNING

This means taking used clothes that someone else has thrown away and creating

something new out of the old, cutting and renovating jackets, knitwear, skirts and more. Since these are not ordinary clothes, every item will incorporate a dose of creativity and added personality, so that no product will be the same as another.

NEW IDEAS

Fashion innovators like Issey Miyake or Martin Margiela regularly question the premises and systems that lie at the base of what fashion is and represents. We have already looked at the innovative concept of A-POC. In contrast Margiela reflects on the notion of fashion and its values through innovative designs and representations that deconstruct the process of garment building. In commercial fashion, the right choice of materials and an awareness of the implications of design for the entire production process can bring considerable change to the market.

RECYCLED MATERIALS

Although a surprising number of materials are recycled and reconverted into new quality products, the number of materials recycled is still very limited. Wool, polyester and cotton are excellent resources for recycling, but we need to create a new market demand through new products that use recycled materials and also to make such materials more readily available to designers.

For instance Muji produced a lot of T-shirts in recycled cotton, using the random colour to striking effect. Calamai is a company that has been reprocessing textile fibres for a century, nowadays these are used by Patagonia together with polyester pile, an infinitely recyclable material.

LONGER LIFE AND REUSE

Unlike modern technological and electronic items, which we will always want new, handmade items age gracefully, absorbing our personality and shape and acquiring a memory of their use. These objects may become relics for the future. If the design of a product focuses on a single material, rather than a mixture of fibres, or the possibility of disassembly, then the component elements of a garment can easily be recycled or reincarnated in a different product, saving the energy used to produce other materials.

Patagonia already offers a take-back and recycling service for their organic cotton and recycled polyester clothing, producing new items from the old.

NEW DESIGN AND PROCESSES

There is an abundance of new technology emerging that uses a different approach to creating clothes which, for example, are put together without sewn seams, as in three dimensional knitting or laser welding. Many examples are already available, ranging from hosiery to Miyake's revolutionary concept, which uses three dimensional knits and fabrics. Digital and virtual technology is being developed that links body scanning with ready-built models to enable the 3D visualization of clothes before their production according to size and preference. A new pattern of production on demand is making headway, which may reduce the quantity of clothing produced to what is really necessary.

FEWER. BUT MORE INTELLIGENT CLOTHES

Garments already exist that are impregnated with perfumes and lotions, or with UV filters or antibacterial properties. In a not so distant future it will be possible to create multifunctional fabrics and clothing able to satisfy our requirements for longer, like a second skin, or fabrics that change colour or design as we wish. This way our wardrobes will no longer have to hold so many clothes to keep us happy.

ELIMINATING SCRAP

There are an abundance of ways to approach this method. For instance, Julia Smith designs her collection so that it may be worn in different ways, to keep user interest alive and use every piece of fabric as part of the garment. Other designers create clothes from a single piece of material, eliminating cuts in the fabric, or create seamless garments.

LOWER MAINTENANCE IMPACT

As we have seen, the environmental impact of washing, drying and ironing the many

garments that remain in contact with the skin is far greater than the production of the item. Therefore every reduction in maintenance may be highly significant in terms of pollution. For example, nanotechnology (surface finishings and other treatments) can confer antistain properties, reducing the need for frequent washing. This potentially lengthens the garment's life and reduces energy consumption, but we must bear in mind that such fabrics cannot be recycled after use. Some time ago, Martin Margiela experimented the use of plastic coated garments creating a wipe-down side.

CONCLUSIONS

The tendency towards "green" in the fashion world is undoubtedly making headway and a lot of work has been carried out on various fronts: fibre production, textile dyeing, minimizing waste of resources and energy, worker rights.

However, the complexity and global import of all the aspects underlying fashion may at first sight appear discouraging. From both a designer and consumer point of view it is easy to feel useless in the face of such enormous issues as ethical labour and the ecological problems of the production chain. After all many people want nothing more than to buy something nice and not too expensive, while fashion designers want the freedom to express their ideas through their creativity.

We must observe however that behavior and attitudes are growing, encouraged also by the criticality of the situation and perplexity about our future, which may really be able to change the current situation. We can outline four significant fields of action which, though not immune to problems, look most promising for the application of a possible future design development.

CONSUMPTION

The diffusion of a growing ethical sensitivity in the fashion field. Solidarity, justice, respect for worker rights and eco- sustainability of production and consumption are values pursued even in this fields where we can rightly talk of critical and responsible production, products and consumption. These aspects are based on an interpretation widely shared in consumption studies: competence and consumer activity.
It is however also necessary to stress that less aware behavior is widespread, verging on passivity (or contradiction): an ethical garment may be worn with others that are

absolutely irresponsible or, on the contrary, with no awareness of its origins in solidarity. At the opposite extreme there are also situations where unethical clothing is worn ethically (as in secondhand clothing of unmonitored origin where in the impossibility of communicating its history, it risks communicating a highly contradictory message).

Indifference, ignorance, superficiality, submission to the diktats of fashion, the difficulty of getting hold of an entire ethical wardrobe, but also the creativity and paradox of iconic fashion communication directors, seem to be the most recurrent motivation.

DESIGN

Importance of aesthetics. Since they are fashion items, their sale cannot be justified only in social terms. The items in this sector and their daily use particularly highlight the importance of beauty and style. In this connection the creativity of designers becomes fundamental, able
to unite inventiveness and innovation in a design that really responds to more or less explicit needs.
We have to be careful however because in this sector it seems to be particularly difficult to discern real purchase motives: at times the ethical dimension so harmoniously matches the aesthetical that it loses its alternative, critical energy. According to some interpreters these products even have a negative effect, deadening the conscience and critical spirit, since they offer the possibility of easing one's conscience with and for the market without necessarily having to reject it as a cause of poverty, marginalization and exploitation, by treating ethics in the same way as any other commodity. In contrast, others see in these beautiful products a powerful engine for responsibility values: though beauty communicates itself, it is much more difficult to communicate justice, which requires an appealing vehicle.

COMMUNICATION: NEED FOR TRANSPARENCY

The shortening and clear visibility of the production and distribution chain, which are the cornerstones of Fairtrade, are indispensable to qualifying a fashion product in ethical terms (whether it is Italian or foreign, eco-compatible or used). However, as we have already said, in this sector it is particularly difficult to see the entire chain clearly, because many stages are lost in eastern European countries and the south of

the world, and in the labyrinths of contracting and subcontracting. However, consumers have for some time been showing interest in these aspects, sometimes exercising negative action (as in the boycotting of Nike). So, it is not by chance that all the situations examined have in common their efforts to communicate the stories of their products to their clients: in this way they reinforce not only the ethical options but also the images induced by the purchase and use of fashion items.

CULTURE

Transforming lifestyles. It is necessary to develop a culture and design practice capable of tackling the transition towards sustainability and promoting the emergence of new generations of intrinsically sustainable products and services. It is not simply a question of producing commodities with a lower impact, but of using the commodities themselves as a vehicle of information and, above all, an engine for change in our approach to consumption, making the kind of behavior that is now necessary for our survival "ordinary". In this sense fashion, which is in some way made up of indispensible items like clothes, but is also a privileged tool for expressing identity, can play a predominating role in normalising this approach.

The message is clear, there is no single "right" answer to the apparently insurmountable contradictions of this world, but it is necessary to put forward diversified solutions according to the level in which one is acting: individual, design groups, buyers, company management, lobbies, charities, educational or governmental organization, national or international. If everyone felt more powerful in relation to the problem, conciliating the interests of the fashion business, fashion as fun and fashion as individual expression, then wellbeing and the interests of the planet might no longer be a paradox.

After all, as Simmel had already sensed, fashion is a formidable lens through which to read the culture of a society and an époque: the particular phenomena of production and consumption on which we have been reflecting have allowed us to catch some new signals from the variegated conceptual universe of responsibility.

In this perspective, far from being a contradiction in terms, the expression "responsible fashion" acquires greater depth and would seem to indicate a new frontier for the cultural workings of contemporary society.

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NOTES

1 In his complete definition, Design is a synonym of projectual activity. Unlike to the common idea that Design is an esthetic value to assign to any forniture object, beetwen the whole definitions, is interesting to consider the one by Thomas Maldonadowho assign to word Design, adopted in 1961 by ICSID (International Council of Societies of Industrial Design): Design consists in "Industrial Design is a creative activity whose aim is to determine the formal qualities of objects produced by Industry. These formal qualities include the external features, but are principally those structural and functional relationships which convert a system to a coherent unity, both from the point of view of the producer and the user. Industrial Design extends to embrace all aspects of human environment which are conditioned by industrial production. ". Maldonado T., Disegno Industriale: un riesame, 1991, pag. 6 Industrial Design is an applied art whereby the aesthetics and usability of products may be improved. Design aspects specified by the industrial designer may include the overall shape of the object, the location of details with respect to one another, colors, texture, sounds, and aspects concerning the use of the product ergonomics. Additionally the industrial designer may specify aspects concerning the production process, choice of materials and the way the product is presented to the consumer at the point of sale. The use of industrial designers in a product development process may lead to added values by improved usability, lowered production costs and more appealing products.

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TAILORING A FUTURE IN WHICH CLOTHES GROW FROM BACTERIA

Isabel C. Gouveia
Marta A. Ferraz
Universidade da Beira Interior

ABSTRACT

The so-called "Fast Fashion" produces environmental and social issues and with them the need to develop more sustainable and environmentally friendly products.
Bacterial cellulose produced by Acetobacter xylinum might be one of the answers we seek when the world cries out for new more sustainable and environmentally friendly textiles that do not end up destroying what best we have: our planet.
The bacterial cellulose differs from plant cellulose because it not contains lignin, hemicellulose and pectic substances and has superior mechanical properties. (Kennedy et all., 1995:3)
Here we describe a method to tailor and produce new fashion Bacterial cellulose (BC) based materials for fashion design, as well, a method to improve the surface of CB and dyeing with natural extracts.

KEYWORDS
Fashion Design, Sustainable Design, Biotechnology, Bacterial Cellulose.

INTRODUÇÃO

A Moda é sôfrega de novidades e com um mundo em constante evolução, a moda procura novas fontes para se diferenciar.

A busca por materiais ecologicamente pensados é cada vez maior, não só por parte dos fabricantes e dos compradores mas também dos designers de moda. E cabe aos designers: investigar e desenvolver novas bases têxteis mais sustentáveis e ecológicas, pensadas para o futuro, um futuro onde é possível "a roupa crescer" a partir de um aquário de chá. Um futuro onde se pensa no ambiente.

No entanto, este futuro não é possível se não se ousar abraçar disciplinas, como a biotecnologia, a electrónica ou as ciências biomédicas, pois a parceria interdisciplinar entre designers e profissionais de outras áreas podem desenvolver um trabalho socialmente responsável.

Desta forma é possível imaginar um futuro onde a "roupa" cresce com o tamanho, a cor e o modelo que mais necessitados, um futuro onde os recursos para produzir este tipo de "roupa" são inesgotáveis, biológicos e de crescimento praticamente autónomo.

CONTEXTUALIZAÇÃO

Como polímero orgânico mais abundante na natureza, a celulose apresenta grande importância na economia global (Recouvreux, 2004). Considerada a principal constituinte do algodão e a principal componente estrutural da madeira, faz com que estes dois sejam as maiores fontes de celulose usadas para diversas aplicações, como papel, tecido, entre outros.

Organismos como algas, plantas, fungos, alguns animais e algumas bactérias como a Acetobacter xylinum, também são produtores de celulose (Varshney & Naithani, 2011, p. 45).

Devido às suas características peculiares como cristalinidade, elasticidade, alta pureza química, durabilidade, elevada capacidade de retenção de água, alta força de tensão e biodegradabilidade, a Celulose bacteriana (CB) tem vindo a ser empregada em inúmeras aplicações industriais assim como em aplicações biomédicas.

O processo de purificação da celulose vegetal (libertação da lignina e hemicelulose, ceras, gorduras e eliminação de resíduos vegetais) implica o uso de produtos químicos altamente poluidores. A CB é quimicamente pura, ou seja, livre de lignina e hemicelulose, ou de cascas e ceras naturais provenientes de plantas (como é o caso da celulose vegetal) (Recouvreux, 2004).

DESENVOLVIMENTO – MÉTODOS E RESULTADOS

A CB é sintetizada por bactérias pertencentes aos géneros Acetobacter, Rhizobium, Agrobacterium e Sarcina. As bactérias com maior eficiência são produzidas pelas chamadas Gram-negativas, bactérias do ácido acético Acetobacter xylinum recentemente renomeadas de Gluconacetobacter xylinus (Steinbüchel & Rhee, 2005).

BANHO DE CULTURA E DESENVOLVIMENTO DA CB

Para a produção de 1L de banho de cultura foi necessário: uma mistura de chá preto com chá verde, açúcar (100g) e Kombucha (300ml). A temperatura ideal de crescimento é de 30ºC e protegida da luz solar.

Verificou-se que ao fim de 7 dias obtêm-se uma película de CB com cerca de 0,5cm de espessura.

PURIFICAÇÃO

A purificação foi feita com NaOH a 1% em fervura durante duas horas, de acordo com o método proposto por outros autores (Maneerung, Tokura, & Rujiravanit, 2007).

As películas foram colocadas com água destila a ferver com 1g de NaOH para 100 ml de água. Durante a purificação, a película liberta a sua cor amarelada para o banho.

A purificação torna a celulose mais pura mas também mais frágil, isto acontece porque o agente alcalino (NaOH) em contacto com o ar e nas condições tempo/temperatura do tratamento leva ao aparecimento de oxicelulose conhecida pela sua menor resistência. Apesar deste resultado já ser expectável, o tratamento revela-se importante no sentido de retirar todo o material biológico e destruir a própria bactéria

que, se não for removida, dará origem ao aparecimento de manchas e à formação de novas membranas.

Durante o processo de purificação das diversas películas, verificou-se que nem todas as películas purificam no período de tempo descrito por Maneerung, Tokura, & Rujiravanit (2007), películas mais espessas necessitam de estar durante mais tempo (+/- 96h) em banho de purificação, como é o caso de películas de espessura superior a 0,5cm.

NEUTRALIZAÇÃO

A neutralização fez-se com 1,5% de ácido acético para 100ml de água durante meia hora, de acordo com o realizado em estudos semelhantes (Maneerung, Tokura, & Rujiravanit, 2007).

Relativamente à neutralização para películas de espessura inferior a 0,5cm, as condições descritas por Maneerung (2007) (Maneerung, Tokura, & Rujiravanit, 2007), verificaram-se suficientes. No entanto, tal como na purificação em películas mais grossas é necessário aumentar o tempo de neutralização uma vez que se constatou que em tempo normal do processo as películas ficam viscosas devido à actuação do alcali que, ao não ter sido bem removido continua a degradar o material.

TRATAMENTO ENZIMÁTICO

Para o tratamento usou-se uma concentração de 3ml de celulases (Celluclast 1,5l) por cada 1 L de tampão acetato, sendo que a temperatura óptima do tratamento é de 50ºC e o pH 5.

O tampão de acetato pH 5 foi preparado com uma concentração de 0,05 molar (moles por litros) de acetato de sódio, ou seja 6,804g por 1L de água destilada. O pH foi acertado para 5 com ácido acético.

A incubação ou funcionalização enzimática foi realizada num copo com uma amostra de CB durante 1h a 50ºC. Ao fim deste tempo a amostra de CB foi colocada em água destilada a ferver durante 2min para eliminar algum tipo de fungo proveniente do tratamento e desnaturar as enzimas.

O tratamento enzimático, revelou-se muito importante para a obtenção de películas de superfície mais lisa e uniforme, como era espectável, de acordo com estudos realizados por outros autores no tratamento do algodão (Cavaco-Paulo, 2001) ou no tratamento do Lyocel (Morgado, Cavaco-Paulo, & Rousselle, 2000). Trata-se de um ensaio inovador nunca antes aplicado à CB, e teve um efeito comprovado de remoção de microfibilas desorganizadas, tornando a superfície da CB mais lisa, macia e brilhante.

TINGIMENTO COM EXTRACTOS NATURAIS

Foram testados como corantes naturais bagas ou fruto como o Mirtilo (Vaccinium myrtillus), a ameixa, a amora e a erva do Cacho da Índia (Phytolacc americana), estes foram esmagados e colocados em água a ferver até a matéria-prima estar descolorada. De seguida, o banho tingido foi filtrado e colocado num novo recipiente com 2% de NaCl por cada 100ml de banho tingido.

A couve roxa, foi cortada em pequenas partes e colocadas em água a ferver, até a matéria-prima ficar descolorada. De seguida, o banho tingido foi filtrado e colocado num novo recipiente com 2% de NaCl por cada 100ml de banho tingido.

O Barbatimão (Stryphnodendron) foi extraído da casca da árvore colocada em água a ferver durante 3h. O banho foi filtrado para novo recipiente com 2% de NaCl por cada 100ml de banho tingido.

A substância corada do Urucum (Bixa orellana L.) foi extraída das sementes que foram colocadas em água a ferver durante 2h. De seguida, o banho foi filtrado para novo recipiente onde se adicionou 2% de NaCl por cada 100ml de banho tingido.

Aos banhos foram adicionados pequenas amostras de CB e colocados a ferver até à coloração das mesmas.

Os resultados obtidos nas experiências realizadas com os diferentes corantes naturais revelaram-se muito promissores e inovadores, uma vez que alguns dos corantes naturais aqui utilizados foram testados pela primeira vez enquanto fonte de pigmentos naturais para qualquer tipo de material celulósico. Desta forma, o tingimento da CB com corantes naturais variados revelou-se possível e com resultados de solidez bastante bons, em alguns casos.

Figura 1 - Mapa da colecção (fonte: composição e ilustração da autora)

CONCLUSÕES

A CB cresce no espaço entre o líquido e o ar ocupando toda a área do recipiente independentemente da sua forma.
O tratamento enzimático revelou-se de grande importância no tratamento de CB, já que a superfície da CB fica mais brilhante, lisa e macia, tornando-a uma material apelativo para a criação em Moda.
A utilização de alguns frutos e bagas testados, como por exemplo a ameixa, foram pioneiras na área da coloração.
É possível obter efeitos de relevo (texturização) durante o processo de secagem do película de CB, aumentando o leque de efeitos pretendidos.
A CB mostrou possuir características muito boas como a fácil modelação e não necessita de certas costuras como nas zonas laterais e dos ombros bem como na aplicação de punhos ou golas, e é possível se fazerem peças de vestuário com pregas e machos, o que trás variedade aos modelos de vestuário.

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DESIGNER/CUSTOMER RELATIONSHIPS: WHAT ROLE DO THEY PLAY IN CONTEMPORARY AUSTRALIAN TEXTILE DESIGN?

Emma Lynas
RMIT, Australia

ABSTRACT

The slow design movement is encouraging designers to build stronger relationships between the designed artefact and the customer they design for. Together with design activism and design thinking, the new design paradigm is moving away from 'please and delight' product to emotionally durable design. With this shift in mind, the relationship and level of connectedness between designers and customers is critical and needs to be better understood. How do designers, specifically textile designers, operating in the commercial mass market sector 'connect' with their customer? How does this relationship contrast to niche market designer-makers? A series of interviews were undertaken with 6 australian based textile designers as part of a larger ongoing research project that is investigating ways for textile designers to encourage more meaningful connections between people and material possessions. This paper examines and analyses the designer-customer relationship in reference to current academic literature on the topic of slow design and designer-customer relationships.

KEYWORDS
Slow Design, Textiles, Sustainability, Fashion.

INTRODUÇÃO

Designers across all product related disciplines are rethinking the role they play in the industrial machine, tantalizing the customer with new and improved products at an increasingly fast pace (Chapman, Chick & Micklethwaite, Fletcher, Fuad-Luke, Gwilt & Rissanen, Thorpe, Wood). Evolving out of the slow food movement, slow design uses the 'Good, Clean and Fair (www.slowfood.com) principles of slow food production as a reference for rethinking the way product is sourced and made, to ensure people and the environment are not negatively effected. In 2006 the Slow + Design manifesto positioned slow at the forefront of design for sustainability, stating that by "linking products and their producers to their places of production and to their end-users who, by taking part in the production chain in different ways, become themselves co-producers" (Capatti et al., 2006 p2). Rather than co design methods such as participatory design and social design (which give the consumer an active role in the design of the product) (Fuad-Luke, 2009 p147), co-producers build a relationship with the designer through exposure to open workshops, one-on-one interaction with the designer, blogs and media editorials. The co-designer becomes a patron, providing support and feedback at different stages during the designer's process.

This window in, fosters the customer's appreciation for the designer's practice, and enables the customer to position his or her own values and notions of value against that of the designer. The value people place on an object is often in keeping with personal values. "While value refers to what something is worth (in financial and other terms), values refer to moral codes, ethics and standards of behaviour adopted by individuals or groups" (Boradkar, 2010 p73). In Designing Things: a critical introduction to the culture of objects, the idea of value is deconstructed into 11 categories, "economic, functional, cultural, social, aesthetic, brand, emotional, historical, environmental, political [and] symbolic" (2010 p46), which suggests that an individual's method for assessing value is personal and changeable depending on circumstance. In contrast, business value is most commonly associated with economic value, whether it be shareholder, market or consumer (Boradkar, 2010 p46). "Value exists because it is generated by a relational act between an object (a thing) that is being evaluated, and a subject (a person) engaged in the process of evaluation" (Boradkar, 2010 p49). Cataldi, Dickson & Grover provide a useful definition of the fashion co-producer, which integrates the individuals personal ideas of value and values.

"This term [co-producer] implies that the end user is a vital part of the movement. By supporting the Slow Fashion movement through their purchases, the co-producer takes on the responsibility of the environmental and social aspects of that purchase" (2010 p3).

WHY BOTHER TO CONNECT WITH THE CUSTOMER?

Business has seen the value in building customer-staff (human to human) and customer-brand (human to brand) relationships in the form of increased business and profits. (Verhoef, 2003 p 30, Yim, Tse & Chan, 2008). In contrast to commercial design mechanisms, slow design encourages focused social interaction (human to human), the slow designer (in most instances) is the creative and the storyteller, informing the customer on how and why the product is the way it is. This narrative enriches the customers understanding of the product and strengthens the bond between all stakeholders. The customer is encouraged to provide the designer with constructive feedback, thus helping the designer to fine tune their product and move forward. (Von Busch in Cataldi, Dickson, & Grover, 2010 p46). The London based slow textile group work with fashion, textiles and participatory design through "[making] with people rather than for people" (Fletcher, the slow textiles group). In summary the importance placed upon the designer-customer relationship in the eyes of slow is one of shared values and mutual support.

METHOD OF APPROACH

The heuristic method of research has been used to 'illuminate or answer' questions posed in this paper (Moustakas 1990 p15). A small sample of 3 Australian based textile designer-makers (DM1, DM2 and DM3) and three Australian based commercial textile designers (CD1, CD2 and CD3) were interviewed in 2011 to gain an impression of the role connectivity plays in contemporary Australian textile design practice.

The Textile Designer-maker - someone who "designs and produces items in small or batch quantities, usually operating as an independent or in a small business context". (Gale and Kaur, 2002)

The commercial Textile Designer - someone who works in a commercial design studio for a large company, or freelancing for a large company responsible for the 'design

and production of original woven, knitted or printed fabrics in the form of either flat paper designs or fabric swatches' (Gale and Kaur, 2002) of which are translated and manufactured by an external party.

IMPORTANCE OF THE PROJECT

The need for this type of research is underpinned by the realisation that designers cannot maintain the post-industrial norm of making more things more often. It has been suggested that in order to sustain the consumer habits of developed Western countries, three planets would be required to provide resources for our consumerist behaviour (Cooper, 2010 p5). In addition to the sheer quantity of man made and natural resources required to maintain our insatiable appetite for product, the waste generated through manufacturing and end of life is hugely problematic. The textile industry is one of the biggest water users in the world "using 3.2% of all the 1,400km3 of water available to the human race each year" (Seagle, 2011 p106). We are each indirectly responsible for 33kg of oil, 3,300kg of water and 55kg of waste generated in the manufacturing of textile based materials and products (Seagle, 2011 p106). Joan Farrer has suggested that the key obstacle in "achieving a sustainable fashion industry is the consumer" (2011 p21). We have been treating the 'customer as king' the customer has the right to "buy, consume and dispose" of purchased product irrespective of the social and environmental consequences (Peattie, 2010 p250–251). Therefore there is a need to examine how designers interact with customers in order to address the problems associated with textile; sourcing, manufacturing, consumer use and disposal behaviour.

QUESTIONS AND FINDINGS

The following questions were asked of the designers who participated in the survey.

Q1 - Describe your customer as best you can, age gender, socio economic group and geographic location.

Q2 - In what ways do you (the designer) connect with your customer?

Q3 - In what ways does this connection to the customer benefit the business?

Q4 - In what ways does this connection to the customer benefit your practice as a textile designer?

To follow is a snapshot of the connection Australian based textile designers' form with their customers.

Q1 – Designer-makers profiled their customers in reference to design, DM1 "my audience is quite varied…there are a lot of people [who fit the market] and they are all interested in design". Designer-makers are in direct contact with their customers through retail interaction, designer-maker workshops and or blogs. In contrast commercial designers are informed about the customer through buyers, store operation managers and or senior designers. CD1 used a marketing profile to summarize the customer "the profile customer is a 39-year old mother with two kids". Overall designer-makers have more face-to-face interaction with their customers and were able to give more detailed descriptions of their varied clientele. In contrast, the commercial designers used market segments to describe the company's customer base, CD2 "I think [the customer] is [located] mainly in cities and suburbs…mainly women". Two of the three commercial designers used 'I think' before articulating their understanding of the company's customer base suggesting that the idea of the customer is vague and not primarily their concern". DM3 commented that the customer base is creative and perhaps of a similar mindset to that of the designer, linking into the concept of shared value and values.

Q2 – Designer makers connect with their customers through retail interaction, workshops, blogs, websites and or studio practice, DM3 "[I'm] front of house...I'm the blogger, the email contact, the person who updates the website…I also work in the store so I'm directly relating to the customer as well as being the creative". Commercial designers connect with the customer through buyers, customer surveys, sales figures, store managers and or store operation managers. The most senior of the three commercial designers interviewed felt she had a connection to the customer through the buyers and through visiting stores. CD1 "The buyer [is the link between the customer and the textile designer] the buyer has the intelligence...they spend a lot of time travelling around listening to managers, checking stock, seeing what's going on…they do spend a lot of time talking to customers as well". The commercial designer in the most junior position seemed confused and disillusioned when asked the question.

CD3 "As in do you mean, how do I try and design with the customer in mind because I want to make a connection with them? Or what kind of relationship do I have with

them? You have an imagined [connection], but I don't think the customer thinks about your existence in any way when they are purchasing what you've designed...I don't feel like I have any direct relationship with the customer, it's also too big, it's everyone, everyone around Australia so it's a bit hard to relate. . .[you have to trust] that the buyer knows the customer... There's maybe 6 or more [staff between the textile designer and the customer]...there is sort of no point of you having a perceived relationship with your customer because you kind of don't".

This answer is very telling of how the fast fashion industry operates. CD3 works at the bottom of the design tier for the mid to low-end fashion market in a sourcing studio. There is a sense of frustration in her voice when answering this question. In contrast, DM1 answered with "I invite customer comments because they help me when I'm prototyping. I'm really interested in what someone might do with my textiles once they take [them] home". The design narrative has become an important element in the formation of designer-maker-customer relationships. DM1 "I've been telling my customers for a long time the story behind [my product] I know everyone does [this] now, we all realize the importance of [this], especially designer-makers". The story behind the product is likely to appeal to the "ethics and standards of behaviour" or values of certain customers, (Boradkar, 2010 p 73) strengthening the customer-designer relationship. From the sample of textile designers interviewed it can be established that designer-makers have a greater face-to-face connection with the customer and see this connection as a valuable part of their design process.

Q3 - Two of the three designer-makers commented that the benefit of connecting with the customer from a business perspective is free marketing, DM1 "there's always a story for a magazine...because there genuinely is a story, I'm not having to create some spin around it, so it's a huge advantage for the business". They also mention that repeat customers are common, and that these customers also buy for friends and family due to the one off / hand made appeal of the product. CD2 felt that the sales figures communicate what the customer wants from the product and brand, reinforcing the commercial retail mantra of 'the customer is king'. If the customer is king and the customer is primarily driven by price (Cooper, 2010 p22) then the products raw materials, manufacturing and distribution is going to reflect this also. With the fashion and textile industry cited as "one of the longest and most complicated industrial chains in manufacturing industry" (Fletcher, 2008 p41) the need for transparency is paramount. This needs to be carefully navigated and simplified in order to engage the customer in a dialogue around the implications of their purchase. Jo Kellock CEO, Council of Textile and Fashion Industries of Australia believes that:

"People are starting to value their purchases. This means people are looking at what the value is in terms of production value and what related costs there are to their garments. Consumers now want to know where their clothes and shoes come from, what processes were involved in producing them and who has made them. This is a slower, more considered, more complex view that considers people as an investment" (Wells, 2011 p1-2).

Q4 – Designer-makers feel that the feedback from customers inspires them to keep working. Commercial designers feel that the connection gives them a better understanding of what the customer will buy, (although the question related to their practice as textiles designers, not the business). CD1 "it has made me a lot more aware of the wants, the needs and the requirements of a more middle market customer". CD2 "we're not designing blindly with no understanding of what [will] work. . .[I get] concrete figures and an understanding of what [will] sell in store". The response from commercial designers is aligned with Boradkar's concept of business value (financial, shareholder, market) and design value (market acceptance) (2010 p46).

CD3 does not believe she has a connection with the customer. CD1 feels she has a connection with the customer through her management role and CD2 feels the buyer and store operation manager adequately inform her.

When asked if the designers were aware of the slow design movement, DM2, DM3 and CD3 said yes and could articulate their understanding, CD1 said maybe but asked for clarification and DM1 & CD2 were straight no's. It is interesting to note that DM1 although not familiar with slow design is in fact the designer most aligned to the principles of slow design.

Cataldi et al in their 2010 thesis Slow Fashion: Tailoring a Strategic Approach towards Sustainability proposed that a global network be established to represent the slow fashion movement as a whole. This becomes difficult for the textile designer working in homewares and related textile based industries. Perhaps a method for slow is needed to embrace textiles rather than fashion, as the textiles themselves are the sustainability conundrum pre and post sale.

CONCLUSION

From the data collected interviewing Australian based textile designers it can be established that connection plays a role in both commercial and designer-maker practice. However, the ways in which both parties connect with their customers differ, reflecting the size and core values of the business. Designer-makers interviewed in this study have a face-to-face relationship with their customers, and found this to be a valuable asset both for the business and their practice as textile designers. All three designer-makers were instinctively talking about their customer's from a 'co-producer' rather than 'consumer' mindset. Although the three designer-makers did not explicitly follow principles of slow design, or use slow terminology such as 'co producer' it can be established that their business and practice were shaped by shared values (designer and customer) and mutual support. Commercial textile designers connect with their customers via; buyers, customer surveys, sales figures, store managers and or store operation managers. The connection is not direct and is less personal than that of designer-makers. From the data collected it seems that commercial designers employed in more senior managerial positions are privy to direct customer interaction, where as junior commercial designers are not encouraged to consider the customer in their day-to-day work activities. Designer-makers see the value in sharing their design stories, and expressed their connection to the customer in emotive language. In contrast commercial designers used marketing language to describe their customer base. Overall it can be established that designer-makers have a more holistic relationship with their customers and see this connection as a valuable part of their design business, process and practice.

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CONTRIBUTION OF DESIGN TO THE DEVELOPMENT OF ALTERNATIVE MEDICAL CLOTHING

Lucas Bernardes Naves
Nuno Belino
Maria José Geraldes
UBI. Portugal
Roshan Paul
Marolda Brouta Agnésa
LEITAT. Spain

ABSTRACT

The present research work envisage the development of paediatric, antimicrobial and sustainable clothing for use in hospital environment. This innovative piece of cloth was devised to offer thermoregulation, physiological comfort and psychological well being for children undergoing chemotherapy. Simultaneously, it is intended to contribute for the prevention of nosocomial infections, particularly, cross-contamination with Staphylococcus aureus.
To accomplish these goals we sought to create an aesthetically pleasing and appealing imaging combined with an ergonomic shape; well adapted to infants; with an easy facility of dressing / undressing; open and close; flexibility; freedom of movement; temperature and moisture management and, especially, antimicrobial protection.
For this purpose we built a single knit structure (jersey) with two different raw material compositions: 100% cotton and 100% hemp, which were put to test.
The aforementioned knits were submitted to an antimicrobial finishing treatment provided by three different agents: Agiene®, Bionyl® and Chitosan, each one individually applied by

three different techniques: pad batch, print screen and spray/exhaustion.
Antimicrobial activity was analysed by ISO 20743:2007 standard and the major thermo physical properties were studied with Alambeta (considering the dry and the wet state). The physiological behaviour was characterised by the Permetest apparatus.
Results have shown that the best optimized performance was attained by the sample 100% hemp with chitosan applied by exhaustion. Taking into account this information and all the previous considerations, a prototype of the gown was produced.

KEYWORDS
Medical Textiles; Hemp; Cotton; Physiological Comfort; Thermoregulation.

APPLIED METHODOLOGY

Firstly a theoretical study was conducted in order to comprehend and to define the market in which we were about to work.

In a second stage an exploratory research to characterize the problem and suggest a technological solution for paediatric patients undergoing chemotherapy treatment.
Finally, we made all the practical and experimental work so as to produce and test, a prototype with all aforementioned desired properties.
Contextualization of the problem

There is evidence that in hospital environment and health staff can contaminate patients with various types of bacteria and, in this study, we have investigated a specific type of bacteria: Staphylococcus aureus.

The presence of oxygen (aerobic) or without oxygen (anaerobic) can develop the Staphylococcus aureus colonies. However, such bacteria have higher growth when there is oxygen.

When present in hospital textiles, they can generate odour, contaminate patients and even deteriorate their condition. When present in the body of patients who usually have low immune system can cause diseases such as folliculitis, impetigo, endocarditis, osteomyelitis, and pneumonia, which, if aggravated, can lead to death.
Another factor that greatly influenced this research was the importance of the patients' feelings, who were submitted to treatment for a long period of time. In the case of paediatric chemotherapy patients, they have frequently a low immunological resistance, which can lead, when exposed to bacteria, in contamination and even decisively influence the treatment result.
Medical apparel

The hospital environment is comprehend by several distinct activities which may have direct or indirect contact with a variety of fungi, bacteria and various other micro-organisms. Contamination can occur directly (contact with contaminated blood) or indirectly (through respiratory system).
Due to these factors, the hospital clothes should function as protection and, somehow, as disinfection. Depending upon the function performed in the hospital, the garment consists of: gloves, aprons, masks, goggles and boots.

In Quintana et al. (2007), it was found that "[...] children experience panic situations when placed in front of a person wearing white or with a nurse uniform" (p.414-423). While in Bocannera et al. (2004), found the positive colour influences over the patient treatment, "[. . .] it can help establish balance and contribute to the harmony of body, mind and emotions." (vol.6, no 3.). The clothing is a product that is directly related to the user/body. Interface communication between the body and those around them.
Clothing should be extremely comfortable; if they are tight they can cause discomfort and directly interfere on the heat dissipation (Gambrell, 2002, p.457-464).
The development of uniforms for workers and patients in hospitals is a matter of great importance in order to protect and to assist in distinguishing the users' identification.
Conceptualization of the prototype

It is of great importance to children playing in the hospital because it will aware them of where they are, in such easier way it will also help them to realize more clearly the situation that they are living.

Through play, children can find themselves and rescue their deepest feelings. By their interaction with the games, children, can unconsciously, build strategies and communications to confront their treatment and even create tools to resolve a particular conflict (Fortuna, 2007, p.37).

The construction of subjectivity may be affected due to physical suffering and psychic of the child during hospitalization. Their changed routine is modified because of the treatment. They turn away from school, friends, family and their toys which can generate feelings of pain, sorrow, anguish and anxiety. The fear of loneliness generated by

separation from family during the treatment can produce dramatic situations, creating fantasies about the hospital environment (Cunha, 2007, p.71-73).

The banter in paediatric treatment is very important because it helps children to know and accept the environment around them, occupies better the time, moving away some of the fear of treatment, facilitating their socialization, decreasing anxiety (Almeida, 2007, p.149-167).

With the choice of a particular toy, a child can extend the knowledge of their body, which helps in a straightforward way to understand the disease and the treatment. It decreases the hostility of the procedures in the treatment that most of the time is very invasive and painful (Pedrosa et al., 2007, p.99-106).

In Brazil, it was developed, in partnership with AC Camargo Cancer Center, DC Comics and JWT Agency, a project directed to children undergoing chemotherapy called "superformula". Taking as inspiration superheroes as Batman, Superman and Wonder Woman, was developed thematic capsules for chemotherapy, which aims to assist children to understand the disease and at the same time encourage them to continue with the treatment (Blog Gestão de Logística Hospitalar, 2013).

(a) (b)

Figure 1 – (a-b) Simples of chemotherapy bag. (a) Batman chemotherapy bag; (b) Several Heroes chemotherapy bag. (Source: Blog de Logística Hospitalar)

The director of paediatric oncology at AC Camargo, Cecilia Lima da Costa, said: "Patients are the real superheroes, whose power is to believe in the cure." (Blog Gestão de Logística Hospitalar, 2013)

Through bibliographic research, we came to the conclusion that it is of great importance for the hospital to develop a gown ecologically viable, sustainable with high antimicrobial activity, which can be developed combining knowledge of Fashion Design and textile engineering.

The main purpose of the new technological solution is to protect the body against bacterial contamination, by being effective against possible infections and cross-contamination and, also promoting thermoregulation, providing comfort to the patient. Another important concern for developing the hospital gown is the ergonomic function to facilitate the work of medical personnel on the chemotherapy patient medication, for this reason the openings will be in the middle of the arm and also in the thoracic region.

Children in chemotherapy treatments are affected in every way, from a weakened immune system to emotional level.

Considering this situation and the need for psychological care, we propose to develop a gown that can also interact with these little patients, so that they feel a little safer in relation to the treatment and give to them a chance to forget a little bit this fight that they are living.
The interaction between the patient and the clothing is major factor, which will be developed within the theme "Batman". Interactivity patient/clothing will be made through the possibility that the patient will have to increase or shorten the length of the gown body and also the sleeves. Another possibility will be the development of a cover, which will be antibacterial as well. We are looking to provide "comfort" and interactivity with the clothing. With these contribution we believe, that we can improve their self-esteem.

CHARACTERIZATION OF THE RAW MATERIAL AND KNIT STRUCTURE

The selection of fibres that we worked can be justified due to their intrinsic properties for the development of this dissertation. Cotton is already widely applied in the development of hospital textile and hemp was a possible viable alternative, in which was selected to investigate for replacing cotton as more eco-friendly and sustainable fibre.

COTTON AND ITS MAIN PROPERTIES

The cotton fibre is a white or whitish, some species of the genus Gossypium, family Malvaceae. It is a natural fibre coming from the cotton plant consisting of approximately 94% cellulose. The material produced is organic and takes around three months to decompose, presents a moderate difficulty regarding their recycling, due to difficult access to the technology to make the recycling process.

For the environment, cotton production is not very viable, since it requires a large area for its cultivation, a great need for water and the fact that the fibre is widely attacked by fungi and bacteria (but resists moths and insects). During its cultivation it is necessary to use various types of anthelmintics, insecticides, agrochemicals and other chemical fertilizers, which can weaken the soil making it difficult for subsequent uses and cultivation for other crops.

The cotton fibre is a seed hair, formed by elongating a single epidermal cell. The cotton shape is tubular flattened and twisted. The fine fibres are twisted even more. The surface is slightly irregular, sometimes has a small transverse striations. Cotton fibre is soluble in sulphuric acid.
When the fibre is burned, it burns rapidly and has very little waste, the ash is grey-yellow very thin. Its heating behaviour the fibre decomposes before melting (350°C). It does not melt. Its burning smell is like burned paper.

The fabric made by cotton has better moisture absorption capacity and is adequate for hot and humid weather.

The body perspiration is better absorbed when using cotton fabric in its composition; it has a soft touch and is extremely comfortable and durable. The fibre is very easy to be washed, but it does not resist to chemicals very well.
The cultivation of the cotton fibre is one of the most destructive to the environment. Researches prove that only in the U.S. annually, are used more than 124.74 million kilograms of pesticides in cultivation of cotton and added to this, there is also the need for massive amounts of fertilizers, growth regulators and biocides in general as methyl bromide. Cotton production requires large quantities of water, which can deplete this resource and even cause deposit of salts in the soil, preventing future crops. When the cotton plants grow, the soil can can get dried and oxidized, releasing carbon to the atmosphere decreasing fertility of the soil.

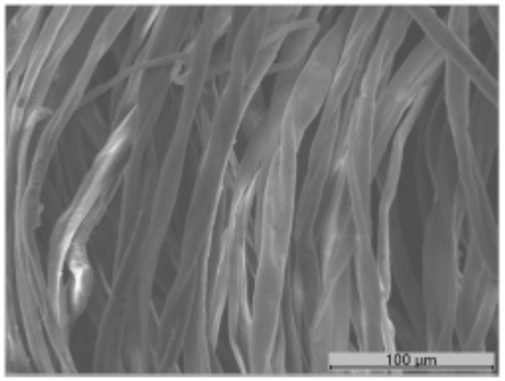


Figure 2. Cotton fibre without any treatment (Magnification: 400)

HEMP AND ITS MAIN PROPERTIES

Hemp fibre is a natural fibre. The common hemp stalk is derived from the Cannabis Sativa it is a mistake to compare the fibre hemp with marijuana, because hemp fibres contains very low levels of the psychoactive chemical tetrahydrocannabinol (THC).

The elementary fibres are similar to linen in size and general appearance.
The hemp surface is irregular, smooth, flat to touch, and cold, has a very low elongation due to its high resistance.

Nodules may or may not be present depending on the fibre but an inner medulla is present. The fibre is soluble in sulphuric acid. Their burning reaction is very rapid and leaving flashpoints. It leaves very little ash, which is grey-yellow very thin. When the fibre is burned, it smell is like burned paper as cotton fibre. It does not have a melting point, due to the fact that the fibre does not melt.

When hemp fabrics are wet their resistance is increased. The fibre length is varied.

Hemp products are primarily used for technical items such as lines to tie, cords, cables and ropes for navigation. The hemp fabric has the property that, once wetted, the fibres are swollen and the fabrics becomes more compact.

The cultivation of hemp has been widely investigated by scientists. It is proven that it is a great fibre for cultivation due to being environmental friendly. For the cultivation of this fibre an authorization is required by law. Depending on the laws of each country in the European community the cultivation is supported and subsidized, in addition to certified seed (which ensures legal THC level), you must have an agree-

ment (purchase and sale) with a transformer authorized by the state, which is only found in France and Spain.

The hemp fibre has a huge potential, it is a natural fibre and biodegradable. The harvest farming is faster, it is good for the soil and uses no chemicals in its cultivation. It provides an environmentally friendly alternative to non-organic cotton which is environmentally destructive. Hemp growing provides soil enrichment by Nitrogen deposits, which can be benefited with rotary crops of soybeans and corn for example. In the cultivation of hemp practically no pesticide is used, and in its cultivation, in the same area, is possible to obtain 250% more hemp fibre than cotton.
Hemp has the longest fibre found in nature, is naturally resistant to moulds and UV ray. By each washing, the fibres become softer, once it relaxes in presence of water.
In 2006, a study was published by the International Journal of Phytomediation (Campbell et al. 2006), in which scientists have found that Industrial Hemp, can assist in Phytoremediation of contaminated soil, which is an emerging technology to clean up contaminated soil. This technology is very viable and inexpensive. The study Showed that industrial hemp (Cannabis sativa) has a very tolerance to benzo [a] pyrene and crysene. Hemp would be a prime candidate for remediation of PAH-contaminated soils.

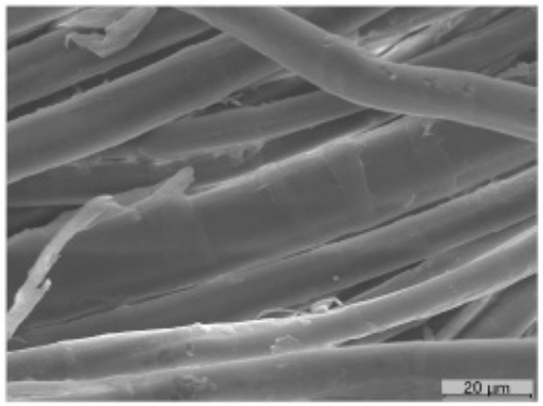


Figure 3.
Hemp fibre without any treatment
(Magnification:1000)

CHARACTERIZATION OF THE PRODUCED KNITWEAR STRUCTURES

After the selection of fibres that have been previously characterized, the yarns were used to develop the knits for this study and later on, when the result is approved, followed with the development of the prototype.
The knits produced have the following dimensional properties, showen, in Tables 1 and 2:

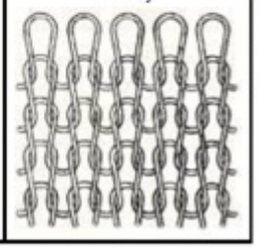
Fiber	COTTON
Weight	2.33g
Mass/ surface unit	211g/m²
Density of rows	17
Density of columns	9
loop length	1.13cm/loop
TEX	18
Nm	2/60
K	3.75
Structure	Jersey 

Table 1- Morphological structure of Cotton knit

Fiber	Hemp
Weight	1.9g
Mass/ surface unit	173g/m²
Density of rows	13
Density of columns	8
Loop length	1.22cm/loop
TEX	35
Nm	1/30
K	4.85
Structure	Jersey 

Table 2- Morphological structure of Hemp knit

ANTIMICROBIAL AGENTS

After the confection of the knits, they were separated and treated with different antimicrobial agents in order to facilitate studies of the antimicrobial activity of each, and better characterization of which agent should be used to perform this particular application (clothing for children under chemotherapy treatments). The antimicrobial agents used were: Bionyl®, Agiene® and Chitosan, their properties and application method on the textile surface will be further detailed.

BIONYL®

The antimicrobial Bionyl® 650 F1P1, is a powder product based on polyamide polymer 6 powder (very porous) coated with antibacterial agent (quaternay ammonium type) manufactured by DDG S.L, Spain. This product is not water soluble and has twice stronger anti bactericides properties that quaternary ammonium salt. It is an inorganic

based powder or thermoplastic polymers or thermosetting. The fabrics treated with Bionyl® can also be used in many hospital applications: home care, hospital and other environments.

The product Bionyl® can be applied in masks for uses in medical environment, due to the fact that even with the presence of breath humidity it does not interfere with its antimicrobial activity because the product is not water soluble.
It is a product that is resistant for several washing cycles, ideal for use in long-uses textiles without losing the effectiveness of the antimicrobial activity.

APPLICATION METHODS

SCREEN- PRINTING

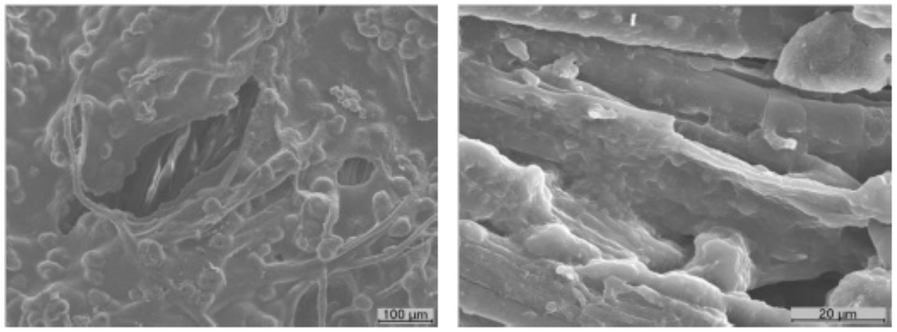
The method of printing consists in stretching the fabric in the stamping table, where posteriorly it will receive the chemical agents. With a printing screen and the product placed on it, the screen is overlaid on the fabric. A manual pressure is applied, with the purpose to spread equally the chemical agents throughout the screen surface, so the fabric absorbs it. With the fabric already treated, it is necessary to fix the product on the fibre. The fabric is moved to a warm kiln which aims to facilitate the drying and chemical fixation of it on the fabric. To prepare the solution for Screen Print, the recipe in table 3 was followed;

Product:	Weight (g)
Bionyl®	5
Resin Centre 441 (latex)	20
Clear HC (thickening agent)	3
Distilled water	72

Table 3- Screen Print recipe

For the solution, the products are placed in the order of the table above. Operating the machine need to use the following values: pressure of 2 (value indicated on the equipment), scrolling speed 10% (value indicated in the equipment = 0,026 m.s -1). Once the emulsion is applied, we need to dry the examples of knit, at a temperature of 80oC. Once the knits are completely dry, it should be cured for one minute at a temperature equal to 120oC.

Note that with the finished knit we can perceive the touch and the presence of a thin resin layer where it was applied. The product is concentrated on only one side of the knit. This treatment may not be as effective, because is not found the product in the other surface. Images (a) (b) illustrated cotton and hemp printed with Bionyl respectively:



(a) (b)

Figure 4 - Fibres treated with Bionyl® by Print Screen (Magnification: 1300) (a) Cotton fibre (b) Hemp fibre. (Source: Optic Center of UBI)

POWDER SPRAY

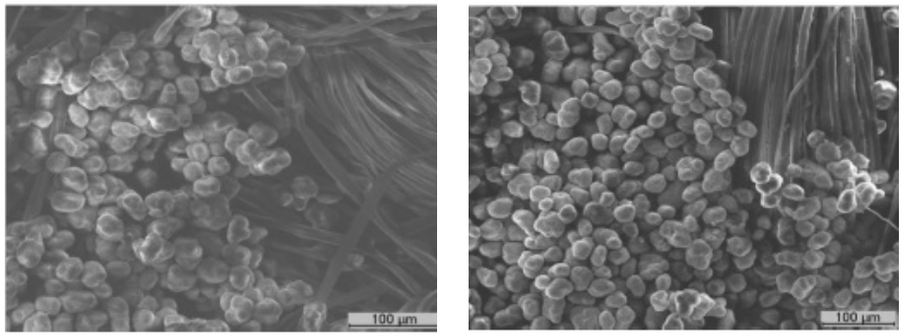
This practice consists of making a latex binder (Resina Centere 441) solution of 60g/l and adding one litre of distilled water. To apply the solution on the surface of the knit we need to use a painting scroll.
Inside the powder spray machine, the antimicrobial powder is placed which will be sprayed electrostatically to the surface of the fabric.
The first step was to apply the binder with distilled water using a painting scroll. Trying to apply as uniform as possible throughout the surface of the knit. The aim is to humidify the fibre knit and to achieve a more feasible penetration and fixation of the antibacterial powder. After that, we have to use the electrostatic spray gun to apply a thin layer of powder over the surface of the knit samples. The machine must be programmed = 70 KV, Air = 1.8, Powder= 0.5.
When the essays are done, there is a need to dry each sample in a kiln during 14 min at 80ºC. After the samples were dried is necessary to cure them at a temperature of 120ºC for one minute.

Difficulties faced:

• Applying a uniform layer of binder and a regular layer of Bionyl® Powder over the whole surface of the knit. Found that the product becomes more dispersed in certain areas than in others.

• It was found that Bionyl could be fixed well on nonwoven substrates, but it is difficult to fix it on knit structures, as they are highly flexible and so the fixed antimicrobial coating can break easily and can fall off.

Note: This process is not very viable. We perceive clearly that in the manipulation of the samples, the coating falls off the knit, because it is not completely fixed. It is suggested to increase the concentration of binder per litre of water, decreasing the amount of Bionyl® powder applied or applying a thin layer of binder on the finished Knit, which also can-not be so good, because the superficial application of the binder can inhibit or reduce the action of micro particles to perform their antimicrobial func-



(a) (b)

Figure 5 - Fibres treated with Bionyl® by Spray Powder (Magnification:250) (a) Cotton fiber (b) Hemp fiber. (Source: Optic Center of UBI).

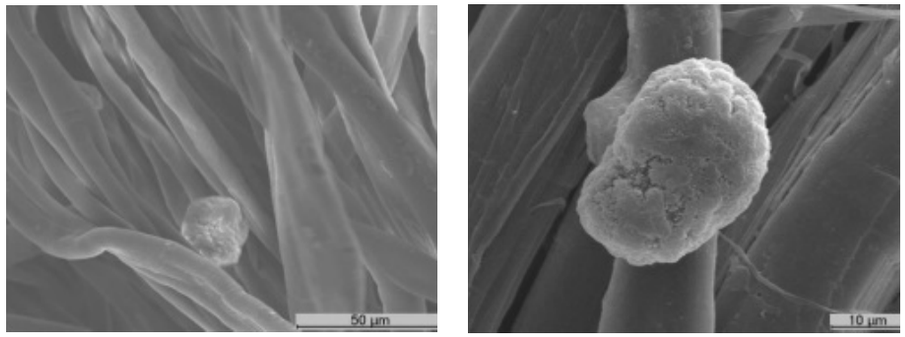
PAD-BATCH

The same process undertaken for Bionyl® Pad Batch is used for the Agiene® Pad Batch, but in this process the formula relation of amount/m2 is chaged. Follow the formula below:

$$\frac{5g\ of\ Bionyl}{1\ m^2\ knit} \cdot \frac{A\ m^2\ of\ knit}{Bg\ of\ knit} \cdot \frac{100g\ of\ knit}{Cg\ of\ water} \cdot \frac{1000\ ml\ of\ water}{1\ ml\ of\ water} = \frac{Xg\ of\ product}{1L\ of\ water}$$

Bionyl® 5 g/m2.
Knit surface = A m2
Knit weight = B grams.
Pick up = x % = C grams of water in 100 grams of knit.

After the Knits pass through the Pad Batch treatment it is necessary to dry the samples which are taken to a kiln in a temperature of 1100C for 14 min, then thoroughly dried the samples, we need to cure the fabric for 30 sec in a temperature between 130ºC to 180ºC, the knit was cured at 150ºC. The process is shown in images (a) (b):



(a) (b)

SEM - Fibres treated with Bionyl® by Pad Batch (Magnification: 800) (a) Cotton fibre (b) Hemp fibre. (Source: Optic Center of UBI).

AGIENE®

Agiene® is an advanced silver antimicrobial treatment for textiles. Agiene® Micro Silver Crystal Technology was developed by Anovotek, LLC and is distributed and supported worldwide by Pulcra Chemicals. Unlike most antimicrobial products, the active ingredients in Agiene® treatments can be recycled by textile manufactures which is another plus for environment. 35% of global consumers have purchased a product with antimicrobial properties, 38% of global consumers would pay more for an antimicrobial treatment product. Therefore it is a great importance to develop a product with antimicrobial functionality and simultaneously eco-friendly.

Agiene® product is engineered with particle size and optimal use of this precious metal while creating superior antimicrobial protection.

Is a product that aims to eliminate bacteria present in tissues and simultaneously combating odour caused by them. At a temperature of 250ºC it has a white emulsion appearance, of ionic nature, slightly anionic. pH: 4.3, It is a safe and effective product, sensitive to light.

APPLICATION METHODS

EXHAUSTION

The antibacterial product dissolved in the liquor is first absorbed, only on the surface, then it penetrates to the core of the fibre and finally migrates thus allowing good uniformity and consistency. While the process continues at a elevated temperature, the thermodynamic and kinetic reaction starts.
Following operations must be carried out for both exhaust and pad application:
• Disperse or dissolve the anti-bacterial product in water and filter;
• Have a homogeneous contact between the liquor and the fibre;
• Make to penetrate the product into the fibre;
• Fix the product in the core of the fibre;
• Washing.

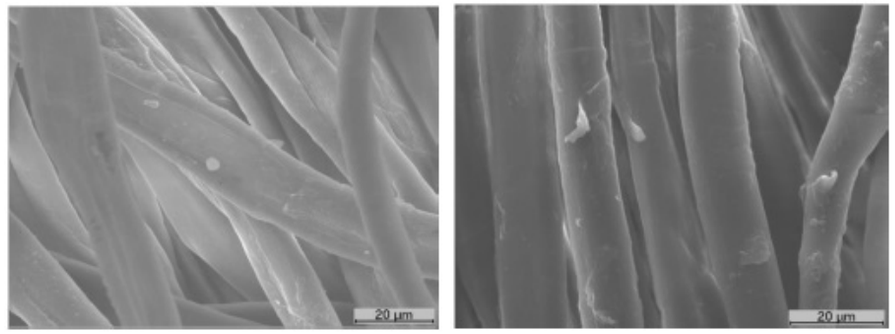
In this treatment, the samples of knit are cut, so that each sample has a maximum weight of 42 grams, because we have to follow the proportion of 1:7, which means: for each gram of knit, it has 7 ml of antibacterial solution. The maximum solution weight added with the weight of the fabric which can be placed in each capsule of the Exhaustion machine is 300 grams or 300ml.

Products concentrations for Exhaustion process:

Agiene® 300-A 0.28% w.f = x g/L.
Nonax 3009-A 0.1% w.f =x g/L.
MgCl2 0.5% w.f= x g/L.
Adjust pH 3.8- 4.2

After the calculations and preparation of solutions, each sample of Knitted fabric was placed in a pot separately, adds up the antimicrobial solution. The exhaust treatment is made for 20 min at 50oC, using 40 RPM (rotations per minute), and a gradient of 2.5, which means that the temperature of the exhaustion chamber will increase gradually every minute 2.5ºC until the temperature of 50oC which is the temperature suitable

for the process. After this time the knits are drawn from inside the pot and taken to kiln, in order to completely dry the fabric at a temperature of 110oC for 14 min. The fabric is cured for 45 sec at a temperature of 180oC.



(a) (b)

Figura 7 - Fibres treated with Agiene® by Exhaustion (Magnification: 1100) (a) Cotton fibre (b) Hemp fibre.

(Source: Optic Center of UBI)

LIQUID SPRAY

It consists in a jet spray containing the chemical with the intended functionality. This process is normally used for automotive painting, is performed by an air gun that stands out against the fabric or the product that you want to colour or finish, the air gun need to be approximately 45 degrees of inclination of the knit fabric to make the finishing treatment. This method is not very effective because the products do not spread uniformly on the fabric. Laboratory analyses have shown that this method sets the chemicals in the fabric unevenly. When the treated sample is analysed in micro-scope it can perceived that at certain points there is an excess concentration of micro particles. Those micro particles are combined in an irregular manner, with increasing its weight causes a partial fixation or even partial detachment of the micro particles. See the equation 2 and table 4:

$$\textbf{\textit{Pick up}} = 100 \cdot \frac{\textit{dry state weight}}{\textit{wet state weight}} - 1$$

Following are the pick up values the knit samples, in table 4:

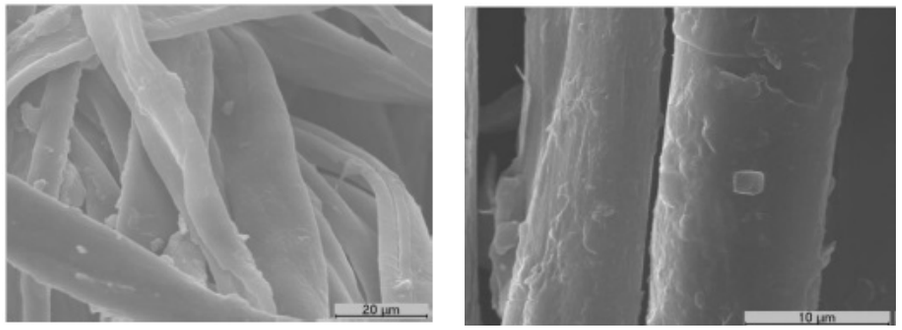
Fibre	Pick up
Cotton	60%
Hemp	66%

Table 4
Pick up of cotton and hemp fibres by Liquid spray application

Products concentrations for Liquid spray process:

Agiene® 300-A 0.28% w.f = x g/L.
Nonax 3009-A 0.1% w.f =x g/L.
MgCl2 0.5% w.f= x g/L.
Adjust pH 3.8- 4.2

Note: After finishing the treatment, the knits were taken to the kiln, where they were dried at a temperature of 110oC for 15 minutes. It was subsequently cured for 30 seconds at a temperature of 150oC.



(a) (b)

Figure 8 - Fibres treated with Agiene® by Liquid Spray (Magnification:1300) (a) Cotton fibre (b) Hemp fibre. (Source: Optic Center of UBI)

PAD-BATCH

When working with Pad-batch treatment, it was first necessary to obtain the degree of moisture absorption for the treatment in question which is called Pick-up. Ii consists of weighing a sample of each fibre knit in the dry state, thereafter the samples pass through the Pad-batch machine using only distilled water. After the samples are weighed again, with the difference of the final weight and the initial weight.

Fibre	Pick up
Cotton	60%
Hemp	66%

Table 5
Pick up of cotton and hemp fibres by Pad-Batch application.

After calculating pick-up was developed a solution for each sample of knit, respecting the following concentrations:

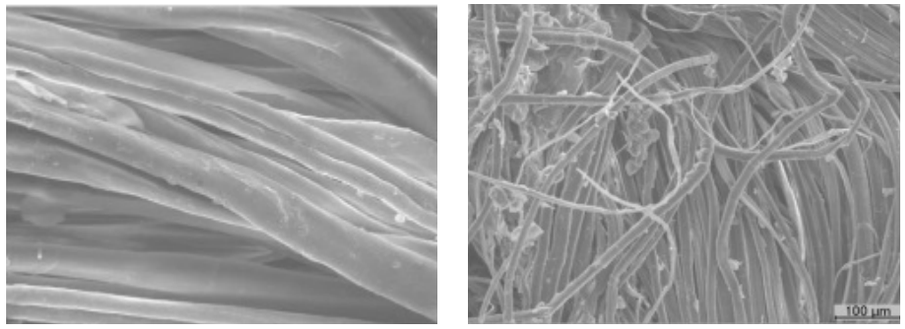
Agiene® 300-A 0.28% w.f = x g/L.
Nonax 3009-A 0.1% w.f =x g/L.
MgCl2 0.5% w.f= x g/L.
Adjust pH 3.8 - 4.2.

Relation product and pick-up by 1 litre of solution, follow the equation 3:

$$\textbf{Grams of product/L} \; \frac{\%\ of\ product}{100g\ of\ knit} \cdot \frac{100g\ of\ knit}{pick\ up} \cdot \frac{1000\ ml\ solution}{1L}$$

Applications of solutions:

The Knit fabric is conveyed to spreading and stretching units which prevent the creases formation, then into the machine containing finish bath and finally crossing to rollers that is heavy, with the objective of squeeze out the excess liquor, impregnating agent in this process allowing one efficient impregnation on the fabric in a short time. When the knit is wet with the antibacterial product, it needs to go to one kiln with the highest possible temperature, to facilitate the penetration of the chemical agent into the fabric (Gao et al., 2008, p.60-72) (Asanovic et al., 2010, p.1665-1674).
After the Knits pass through the Pad batch machine is necessary to dry the samples which are taken to a kiln in a temperature of 110oC for 14 minutes, then thoroughly dried the samples, we need to cure the fabric for 30 seconds in a temperature between 130oC to 180oC, the knit was cured at 150oC.



(a) (b)

Fibres treated with Agiene® by Pad Batch (Magnification:800) (a) Cotton fibre (b) Hemp fibre. (Source: Optic Center of UBI).

CHITOSAN

Chitosan is produced by deacetylation of chitin, which is the structural element in the cell walls of fungi and also in exoskeleton of crustaceans, it is a renewable natural resource (it is a nontoxic natural polymer and biodegradable to natural body components), can be a natural polymer transformable into fibres with wide application fields in medicine, pharmacy, food technology, biochemistry, etc.
In medicine it may be used as an antimicrobial agent, and bandages to be used in order to stop bleeding, but it can also be used to deliver certain drugs through the human skin.

The agents of chitosan works interactively between erythrocytes and cell membrane, which possess negative charges and chitosan has positive charges, which leads to rapid formation of thrombi and also the involvement of platelets.
The lack of positive charge means that the chitosan is insoluble in neutral and basic solution. However, when this substance is found in acidic solution, protonation occurs at amide groups, leading to improved solubility, which is of great importance to the biomedical field.

APPLICATION METHOD

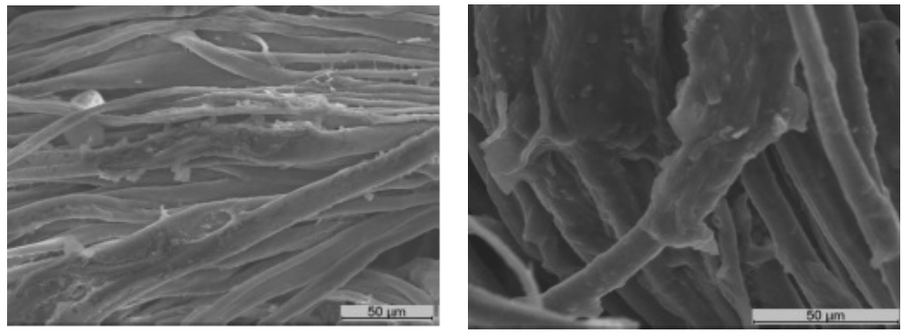
EXHAUSTION

The Chitosan treatment consisted primarily on a pre-treatment of knit samples with citric acid (99%) 100g/L add Na2HPO4.12H2O or NaH2Po42H2O 60g/L. After performing the treatment, by Pad-batch, had to dry the fabric 900C for 5 minutes and then curing at a temperature of 180oC for 5 minutes.

After performing the pre-treatment with acid began the treatment with Chitosan. The method was performed by Exhaustion, where we had to prepare a solution of Chitosan 2% v/v, Acetic acid 2% v/v, stirring it for 1 h at 60oC. The emulsion ready to place the emulsion within the knit and capsules into Ugolini equipment, expose the fabrics to a temperature of 60oC for two hours. After completing treatment leave the knits drying at room temperature.

Problems faced with chitosan treatment:
• During the execution of treatment with Chitosan antimicrobial agent, we realize that

it stirring for 1 h at 60oC was not sufficient enough to completely dissolve the solution of Chitosan. We made an optimization of the temperature raising it from 60oC to 80oC during the same period of time.
• When we analysed the knits already treated with Chitosan, perceive a touch too rough and hard, losing much of the initial aspect of the mesh. Aiming to improve the touch we chose three ways of investigation. First investigate the concentrations of Chitosan. Chitosan initially tested with 2% v/v, decided to decrease the concentration for Chitosan 1% v/v Chitosan and 1% v/v, further investigation in which would be the best way to improve the touch. Washed the knit sample already treated with 0.1M Acetic acid and another sample of tissue with only distilled water.
• After both treatments we concluded that treatment with Chitosan agent, is better when treated at a concentration of Chitosan 1% v/v, and after that the treatment is completed to remove excess of Chitosan on the surface of the knit sample, it was washed with distilled water.



(a) (b)

Figure 10 - Fibres treated with Chitosan by Exhaustion (Magnification: 500) (a) Cotton fibre (b) Hemp fibre.
(Source: Optic Center of UBI)

ANTIMICROBIAL TEXTILES

After treatment of knits with antimicrobial agents, their characteristics were slightly modified as regards the absorptivity of water. It was noticed during the test that the amount of antimicrobial activity made necessary to make two different tests, one facing the knitting treated by Agiene® agent, which has hydrophilic characteristics, the method to verify the antimicrobial activity was carried out by absorption method. The knits that have been treated by Chitosan became hydrophobic after the treatment, so the inoculation of bacteria was done by transfer method. Both methods will be

explained further in this topic.
The knitted fabric treated by Bionyl® agent were not tested, due to the fact that, during handling, it was found that most of the antimicrobial product comes out of the knit surface, as it is not properly fixed on the cotton and hemp fibres.

OBJECTIVES

The International Standard, ISO 20743:2007 specifies quantitative test methods to determine the antibacterial activity of antibacterial finished textile products including nonwovens. ISO 20743:2007 is applicable to all textile products, including cloth, wadding, thread and material for clothing, home furnishings and miscellaneous goods regardless of the type of antibacterial agent used (organic, inorganic, natural or man-made) or the method of application (built-in, after-treatment or grafting).

TEST CONDITIONS

Test method: absorption method (an evaluation method in which test bacterial suspension is inoculated directly onto samples).
• Weight of the specimens:0.4 ± 0.05 grams
• Number of textile fabrics tested:
• 6 negative control
• 6 treated samples
• Bacteria for the test:
Staphylococcus aureus ATCC 6538P
Bacterial concentration used: 1.5 - 3 x 105 cfu/ml
Contact time with agitation: 24 hours
Due to the hydrophobicity of the fabrics, a test was made with the method of transfer plate which allows the inoculation of hydrophobic tissue.
Test method: transfer method (an evaluation method in which test bacteria are placed on an agar plate and transferred onto samples).
• Diameter of the specimens: 3.8 cm
• Number of textile fabrics tested:
• 6 negative control
• 6 treated samples
• Bacteria for the test:
• Staphylococcus aureus ATCC 6538P

Bacterial concentration used: 1.5 - 5 x 106 cfu/ml
Contact time with agitation: 24 hours

PROCEDURE

PROCEDURE PERFORMED IN ABSORPTION METHOD:

1. The tissues were inoculated with 0.2 ml of Staphylococcus aureus.
2. Half of them (three negative controls and three treated samples) are analysed at zero contact time.
3. The other half of the fabrics is incubated for 24 hours at a temperature of 37oC. After this contact time are analysed.
4. For the analysis of fabrics (at 0 hours and 24 hours), each sample was added 20 ml of neutralizing (Dey-engley) and is subjected to mechanical agitation for about a minute with the vortex.
5. We performed bench dilutions and plated on Triptone soy agar (TSA). The plates are incubates for 24 – 48 hours at a temperature of 37oC
6. Determination of the antimicrobial activity

PROCEDURE PERFORMED IN TRANSFER METHOD:

1. 12 agar plates were inoculated with 1 ml of the inoculum and covered all surface of the plate. Remove the excess liquid and the plate allowed to stand for 30 seconds
2. The fabrics specimens were placed on top of the agar plates and performing a transfer of bacteria from the plates to the fabrics.
3. 3 negative controls and 3 treated samples are analysed at zero contact time.
4. Other 3 negative controls and 3 treated sample are incubated for 24 hours at a temperature of 37oC. After this contact time are analysed.
5. For the analysis of fabrics (at 0 hours and 24 hours), each sample was added 20 ml of neutralizing (Dey-engley) and is subjected to mechanical agitation for about a minute with the vortex.
6. We performed bench dilutions and plated on Triptone soy agar (TSA). The plates are incubates for 24 – 48 hours at a temperature of 37oC
7. Determination of the antimicrobial activity.

After the above procedure, the calculation has been done to evaluate the antimicrobial activity

1. Sample Nº 1 (COTTON):
   - Negative control
   - Treated sample

Table 13 - Result of antimicrobial activity for Cotton fibre treated by Agiene.

	Negative control	Sample 1
Concentration of inoculum	1.6×10^5 cfu/ml	1.6×10^5 cfu/ml
Average concentration of bacteria (t=0h)	6×10^2 cfu	6.2×10^2 cfu
Average concentration of bacteria (t=24h)	5.8×10^8 cfu	1.1×10^8 cfu
Determination of antimicrobial activity		
Value F	5	-
Value G	-	4.2
Antibacterial activity (A)	**0.8**	
Antimicrobial activity in percentage		
R (%)	**81%**	

2. Sample Nº 2 (HEMP):
   - Negative control
   - Treated sample

Table 14 - Result of antimicrobial activity for Hemp fibre treated by Agiene.

	Negative control	Sample 1
Concentration of inoculum	1.6×10^5 cfu/ml	1.6×10^5 cfu/ml
Average concentration of bacteria (t=0h)	4.6×10^2 cfu	5.4×10^2 cfu
Average concentration of bacteria (t=24h)	4.2×10^7 cfu	4.04×10^4 cfu
Determination of antimicrobial activity		
Value F	4	-
Value G	-	0.9
Antibacterial activity (A)	**3.1**	
Antimicrobial activity in percentage		
R (%)	**99.90 %**	

3. Sample Nº 3 (COTTON)
   - Negative control
   - Treated sample

Table 15 - Result of antimicrobial activity for Cotton fibre treated by Chitosan.

	Negative control	Sample 1
Concentration of inoculum	3.6 x 106 cfu/ml	3.6 x 106 cfu/ml
Average concentration of bacteria (t=0h)	8.2 x 104 cfu	4.2 x 104 cfu
Average concentration of bacteria (t=24h)	3.4 x 108 cfu	1.5 x 107 cfu
Determination of antimicrobial activity		
Value F	3.6	-
Value G	-	2.5
Antibacterial activity (A)	**1.1**	
Antimicrobial activity in percentage		
R (%)	**95.5 %**	

4. Sample Nº 4 (HEMP)
   - Negative control
   - Treated sample

Table 16 - Result of antimicrobial activity for Hemp fibre treated by Chitosan

	Negative control	Sample 1
Concentration of inoculum	3.6×10^5 cfu/ml	3.6×10^5 cfu/ml
Average concentration of bacteria (t=0h)	3.9×10^4 cfu	4.4×10^4 cfu
Average concentration of bacteria (t=24h)	3.2×10^8 cfu	2.7×10^7 cfu
Determination of antimicrobial activity		
Value F	3.9	-
Value G	-	2.8
Antibacterial activity (A)	**1.1**	
Antimicrobial activity in percentage		
R (%)	**91 %**	

The analysis of the antimicrobial activity denotes that the best result of all is obtained in Hemp with Agiene. This value is greater than the one we got with the same agent of cotton. Regarding the antimicrobial agent chitosan the higest value is achieved with cotton while hemp decreases its performance when compared to the other agent. However the difference between those values is not as significant, due to the fact that antimicrobial activity above 90% is considered to be high.

THERMAL COMFORT OF FUNCTIONAL TEXTILES

The thermal properties were evaluated in the apparatus Alambeta. The tests were performed according to the directions recommended by the manufacturer. The procedure used was: The samples tested were conditioned by leaving samples 48 hours in an atmosphere of 20oC (2oC may vary more or less) and a relative humidity of 60% (ranging 5% more or less).

We tested the thermal properties of the knits in dry and wet state. For analysing the thermal properties in the wet state, we added a solution of distilled water with non-ionic detergent to 0.5 g/L.

It is very important that the tested samples are well centred and below the measuring point of the device. The tests were carried out on 30 specimens and then we made the global average to obtain the results.

Table 6- Thermal Properties of Cotton and Hemp fibre

	DRY STATE			WET STATE		
	b $[W.m^{-2}.K^{-1}.s^{1/2}]$	λ $[W/m.K]$	$\frac{r}{[m^2K/W]}$	b $[W.m^{-2}.K^{-1}.s^{1/2}]$	λ $[W/m.K]$	$\frac{r}{[m^2K/W]}$
Natural Hemp	188	56,4	16,9	216	105,8	15,7
Hemp Chitosan Exhaustion	166	55,5	11,5	151	132	5,5
Hemp Agiene® Pad Batch	188	49,7	16,7	196	98,8	10,4
Hemp Agiene® Exhaustion	173	58,4	15,9	184	114	10,4
	DRY STATE			WET STATE		
	b $[W.m^{-2}.K^{-1}.s^{1/2}]$	λ $[W/m.K]$	$\frac{r}{[m^2K/W]}$	b $[W.m^{-2}.K^{-1}.s^{1/2}]$	λ $[W/m.K]$	$\frac{r}{[m^2K/W]}$
Natural Cotton	176	50,4	38,8	178	83,5	28,6
Cotton Chitosan Exhaustion	172	70	10,7	211	114	6,6
Cotton Agiene® Pad Batch	154	65,5	11,8	194	119	7,8
Cotton Agiene® Exhaustion	162	62,7	18,6	221	131,3	8,1

Antimicrobial activity in percentage	
R (%)	91 %

Table 6 - Thermal Properties of Cotton and Hemp fibre

The results obtained will be far based on the wet state, as this represents the state that most closely matches the conditions of use of a particular piece of clothing, the dry state corresponding to time zero, which is the time when user dresses the cloth on.

The presented case of hemp, samples treated with chitosan applied by exhaustion had the best thermal due to its low thermal resistance (r) and a high conductivity (λ). Not with standing the absorptivity (b) is not the highest, but the differences are not significant.

Identical results were obtained for cotton samples, in which the best results were obtained by chitosan applied by exhaustion, this sample presented high thermal conductivity (λ) and the lowest thermal resistance (R). The absorptivity (b) is not the highest, but the difference between the attained results is not significant for the quantity in question.

According to the analysis of the thermal comfort properties, we can say, that hemp treated with chitosan applied by exhaustion had the lowest resistance and the highest thermal absorptivity although the thermal conductivity is not the highest. When analyzing cotton, we also point out that the sample treated with chitosan, applied by exhaustion had low thermal resistance and high thermal conductivity as intended. The absorptivity is not the highest, but the differences are not significant results.

PHYSIOLOGICAL COMFORT OF FUNCTIONAL TEXTILES

For testing of the physicological properties of this investigation Permetest device was used. The tests were performed according to the recommendation given by the manufacturer. The samples tested were conditioned by leaving samples 48 hours in an atmosphere of 20oC (2oC may vary more or less) and a relative humidity of 60% (ranging 5% more or less).environment for a period of 24 hours. After this period of time, the test was performed with knits in dry state.
Afterwards, the knits were tested in the wet state, the samples were inoculated with solution of distilled water with non-ionic detergent at a concentration of 0.5 g/L. Waited until the samples absorb completely the solution. Continuous measurements were performed.
The tests were carried out on 30 samples and descriptive structure were made.
Table 7- Water vapour permeability (%)

Standard textile

Initial Weight	Final Weight	Difference	Area	WVP=24M /At	Rate %
137,772	131,946	5,826	0,005408	1077,319	0

Reference sample	Initial Weight	Final Weight	Difference	Area	WVP=24M /At	Rate %
Hemp Natural	140,809	134,888	5,921	0,005408	1090,325	101,21
Hemp Chitosan Exhaustion	141,928	135,961	5,967	0,005408	1090,081	101,18
Hemp Agiene® Pad Batch	140,467	135,093	5,374	0,005408	1050,703	97,53
Hemp Agiene® Exhaustion	140,440	135,223	5,217	0,005408	964,706	89,55
Cotton Natural	139,899	134,068	5,831	0,005408	1078,244	100,09
Cotton Chitosan Exhaustion	140,085	134,098	5,987	0,005408	1076,433	99,92
Cotton Agiene® Pad Batch	139,879	134,111	5,768	0,005408	1066,595	99,00
Cotton Agiene® Exhaustion	140,663	135,038	5,625	0,005408	1040,152	96,55

Table 7
Water vapour permeability (%)

According to the analysis results of water vapour permeability it is possible to conclude that the both fibres, cotton and hemp, without treatment, have the highest values for the water vapour permeability.
When analyzing finished samples, we can clearly observe that hemp sample treated with chitosan applied by exhaustion, had the best permeability, which is of great importance for our prototype, because it means it has an excellent ability to promote physiological comfort, meaning that the natural transpiration of the body, more or less intense, it will evaporate easily to the environment. With cotton , we also observed that the sample with best permeability behaviour is the sample that was treated with chitosan applied by exhaustion.

TECHNICAL DRAWING

Technical drawing during the development of the collection is one of the most important issues. It has to be thought carefully and in detail.
Nowadays, most of the company's design work is performed by the computer although the software can change from one company to another. Technical drawing needs to be clear and with all the technical parameters detailed the type of finish, sewing, the fabric to be developed, product colour and measures, sizes scale. It must leave doubt regarding their interpretation.

In a company, there are many professionals involved in the development and implementation, on the different segments of production, so the information contained in the technical drawings must be very specific because it must be understood by seamstress, pattern makers and even by the customers who is asking the job, in case the designer has an outsourced labour as freelancers.

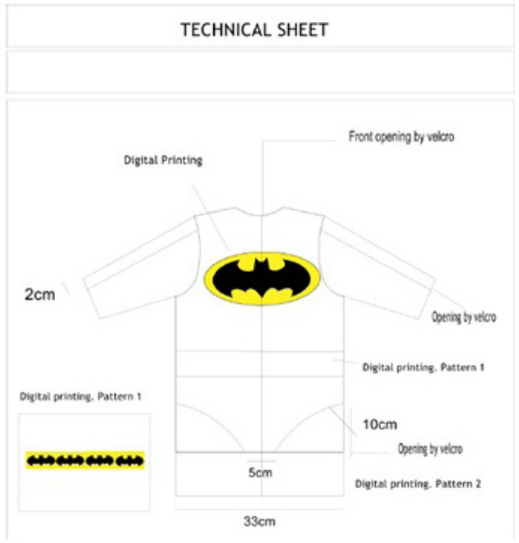


Figure 11
Technical Sheet Front

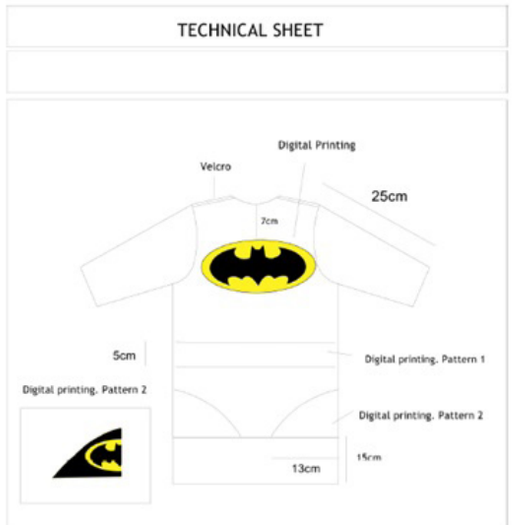


Figure 2
Technical Sheet Back

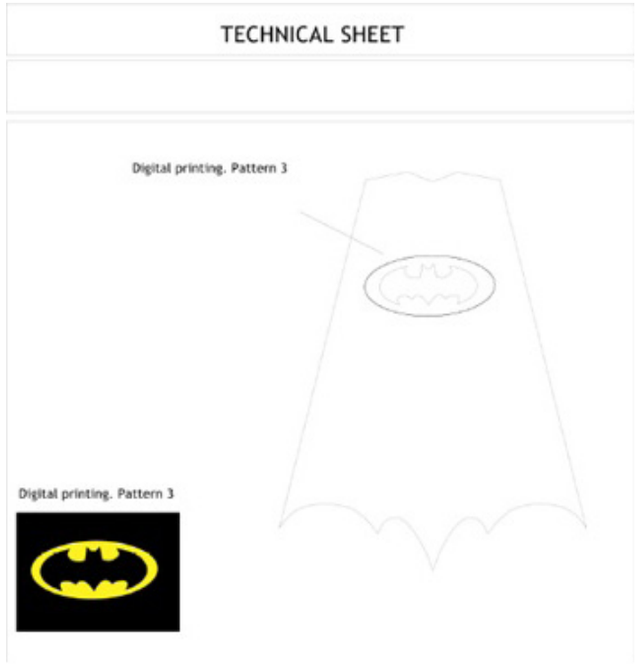


Figure 3
Technical Sheet Cover 1

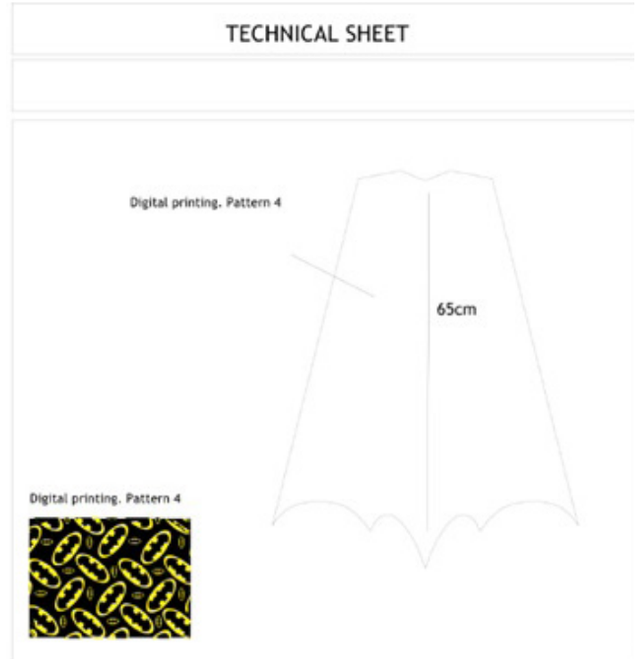


Figure 4
Technical Sheet Cover 2

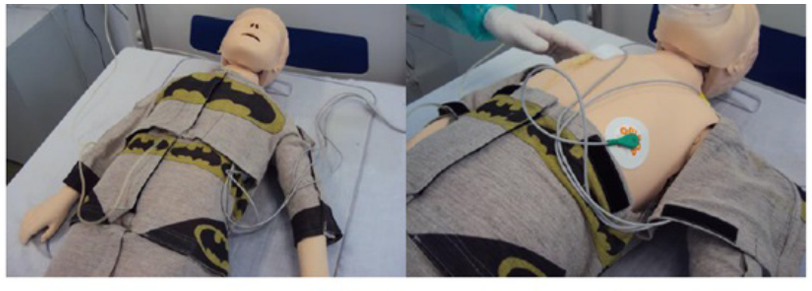
PROTOTYPE OF GOWN DEVELOPED

At the conclusion of the experimental tests, it was possible to certain the best optimized combination of the fibre and antimicrobial agent. In sequence, we developed a gown prototype. The following images give us a visual description of the final outcome and underlines the best characteristics that we sought to be a part in our prototype.

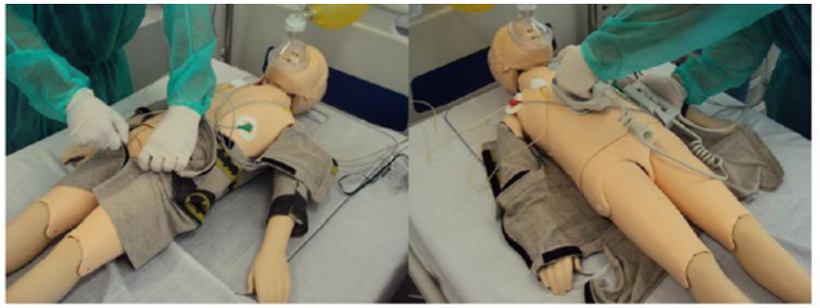
On the next images, we can see the final visual outcome of the developed gown.

(a) (b)

(c) (d)



(e) (f)



(g) (h)

Figure 15 (a) Providing psychological comfort for the patient (b) Easiness in handling and application of catheters (c) Facility when handling the Implantofix (Implantable Drug Delivery System) (d) The cover can be used as blanket (e) Facility in positioning of cardiac monitoring wires and auxiliares tubes for drugs or serum delivery (f) Possibility of opening by modules (g) Opening easily in case of urgency and emergency interventions. (h) Simulation of emergency intervention.

CONCLUSIONS

A) REGARDING THE ANTIMICROBIAL APPLICATION PROCESS

After working with different processes such as Screen print, Powder Spray and Pad Bach, we come to the conclusion that the chemical Bionyl®, should only be applied to non-woven, because of the properties and behaviour that it possesses. We decided stopping further experiments with the Bionyl® product. The test in which were analysed were carried out with knit fibres of cotton and hemp. All the structured knit were jersey with yarn count between 24 Nm and 30 Nm. It was perceived that those knits have an open structure, are extremely malleable and are flexible which not contribute to the thin layer of Bionyl® applied.
An antibacterial knit was effectively obtained, but with difficult application for medical textile, because it is perceptible to the naked eye, that the Bionyl® product, when used in this quantity, cannot get a good fixation on the fibres which were investigated and it changes completely the knit touch.

B) OVERALL CONCLUSIONS:

Accordingly to the aforementioned assumptions, we conceive and developed a gown prototype suitable to be used in healthcare facilities by male children aged 2-8 years old, when submitted to chemotherapy treatment.
For this purpose we sought to develop a gown with a set of characteristics that met

the necessary requirements, namely, great antimicrobial effectiveness, maximized thermo physiological comfort and ergonomic shape combined with an appealing appearance, so as children may be led to interact with it, improving their psychological well being during treatments.

It was also our intention to develop a gown based upon sustainable fibres in order to attain a more eco-friendly piece of cloth. Moreover, we aim at the replacement of the usually used woven fabrics by knits.

In order to materialize the planned gown we produce knits with two different types of raw-materials: cotton and hemp, both of them in a single jersey structure.
Upon this knits three different types of antimicrobial agents - Bionyl, Agiene and Chitosan - were applied by different processes - Pad Batch, Exhaustion, Spray Powder and Screen Print, respectively.

Several samples of finished knits were put to test in order to ascertain which one had the most optimized behaviour in terms of antimicrobial effectiveness and thermo physiological comfort. In the end, as proven, chitosan applied by exhaustion revealed to have the best optimized antimicrobial effect combined with maximized comfort.
Taking this into account this information and in order to be able to develop our prototype, we produced new knits in accordance to the previous conclusion. The drawings process, pattern making, sewing operations, etc. followed the technical details defined.

In conclusion, this research work proposed, conceived, developed and tested a new viable and, technically improved, alternative gown, to be used by small children undergoing chemotherapy.

FUTURE RESEARCH GUIDELINES

Upon completion of a thesis it is likely to think that we add some contribution for the scientific area in question. Notwithstanding, it is also a very common feeling that the work carried out is not fully finished and has a lot of new possibilities to enrich and explore. Bearing this idea in mind, it is my true believe that the developed work can be thought as an initial matrix of a wider work that encompasses other technological solutions so as to develop sustainable and functional cloths for hospital and healthcare environments.

Thus, in order to enhance and complement the present investigation, we intend – in a near future - to develop a new experimental framework and develop a supplementary set of trials aiming at:
• Develop new knits structures incorporating localized patches with new fibres and functionalities to impart other properties, namely, self-cleaning.
• Despite given information by the antimicrobial agents producers we intend to carry out experimental tests to assess the washing fastness of the finished knits
• Widening the scope of antimicrobial tests in order to evaluate new bacterial strains, especially, Gram negative specimens, such as Klebsiella pneumoniae which is very commonly found in hospital environment.
• If possible, to develop a clinical trial (in hospital facilities) where our gown proposal will be put to test under real conditions, in order to ascertain its impact into the children's treatment quality and safety.

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Moda / Fashion

FASHION AS COMMUNICATION AND INFORMATION METHOD:ANALYTICAL AND APPLIED STUDY OF EGYPTIAN FASHION IN LIGHT OF RECENT POLITICAL CHANGES

Rehab Hassaan

Helwan University. Egypt

ABSTRACT

The historical facts proves that fashion is affected strongly by the political changes which any country witnesses. Egypt passed many of unstable political events since 25 January 2011 revolution. The current study observes the most notable changes in youth fashion and also the scale of using fashion as a method to express and communicate with others .

Also the researcher designs some fashion designs to express the recent events. The current research considers the third part in a research series, the researcher presented the first one in Sins University-Malaysia- employing fashion to express the corruption in the era of the rule of President Mubarak, the second one in global fashion conference –Madrid-dealing with fashion as a method to express the Arab revolutions spring, and the current research is the third one to express last political events through fashion design.

The research questions as follows :

1-To what extension Egyptian youth fashion has influenced by policy in light of recent events?

2- Can the researcher express the recent political state through clothing?

3- What is the fashion designers and fashion professors review of the suggested designs by the researcher ?

To answer the researcher questions, the research follows the descriptive methodology with using the applied method, and for access to the research results, the researcher designed a questionnaire for reviewing the suggested fashion designs.

KEYWORDS
Fashion As Communication Method, Recent Egyptian Events, Expression Through Fashion, Political Fashion.

PROBLEM OF STUDY

The research focuses on registering & analyzing the changes taking place in the Egyptian fashion during & after the Revolution of 25th January 2011 since it's the first revolution with which Egypt coexists & which has great effect on the Egyptians attires & clothes, plus, proposing some designs expressing the state of perplexity & division which the Egyptian society lived after the revolution events.

IMPORTANCE OF STUDY

1- The current study is considered a study registering the influence of the variables existing in the Egyptian society, on the Egyptians attires & clothes & this study counts the clothing types & patterns with which youth appears during & after the revolution.
2- It is considered one of the first studies displaying the influence of the political atmosphere on fashion in Arab society.

OBJECTIVES OF STUDY

1- Registering & analyzing the most important variables happening in the Egyptian youth fashion during the Revolution of 25th of January 2011 & the events following it.
2- Proposing some designs characterizing & expressing the state of perplexity & instability which Egypt is facing in the last period & the division among the Egyptian society classes & categories especially, during the demonstrations & sit-ins, between supporters & resisters concerning what is renewed on the political field.

METHOD & TOOLS

The researcher follows the descriptive method since she designed a questionnaire displayed to a group of professors of fashion design & designers for the purpose of & aiming at knowing their opinions concerning the proposed designs. In addition, the researcher follows the applied method since she executed three proposed designs.

1- EXPRESSION THROUGH FASHION

Is fashion a kind of art? A question on which many studies were based & several lectures were made to answer it, however no doubt that fashion, if it isn't a complete art – as some philosophers think of it – it bears lots of art characteristics, as fashion deals with colors, lines, areas, attires & clothes as elements arranged & organized according to bases of conformity or contrast realizing unity, rhythm, & balance specialized for each design, called in the last, "complete artistic work" if it is allowed to be expressed.

Fashion deals not only the design constituting elements (lines – colors – materials etc…) according to bases the designer sees for the purpose of creating an executed piece of clothes wearable in the daily life pursuant to beautifying norms required by each period, fashion began tens of years ago, in other words, it lately deals with human cases including a lot of meanings & purports, yet a group of the most famous fashion designers worldwide were skilled in this direction, plus they presented whole groups inspiring their designs from the meaning or case tackled, these designs are in the form of clothes wearable in the normal practical life in the form of (Ready to Wear Collection) & some of them are more complicated as the designer fuses in the work he proposes to create for us, an artistic work, all what distinguishes it & makes it wearable is that it was designed & executed to be placed & displayed on human body whether artificial or living, simultaneously, his ideas aren't submitted to the common wearing norms, in this case, the artist's space is vast in putting his ideas, execution techniques & materials choice, he is neither searching for sweat absorbable materials nor easiness in wearing & putting off nor easiness in movement, rather his main aim is to express the case he is tackling in a great expressive ability in form of a creative costume, between these two directions, there is a wide area for fashion designers to put their ideas & their ability to be worn.

Of the first direction designers, the international designer, Alexander Macqueen who has presented the show of autumn/winter 1995 where he expressed England extortion or rape of Scotland lands, since his collection appeared expressing rape, pain & destruction, when critics thought that the meaning of this collection is the

disaster of woman rape incident, the designer answered that the meaning is Scotch lands rape with which the designer was greatly affected as he is Scotch in origin, a lot of critics see that Macqueen group (collection) in spite of how horrible it expresses, yet it bears many beauty characteristics required by modern female attires & clothes. Contradictorily, we found that some designers present designs unable to be worn in the normal life which look like attires fantasy or masquerading attires, clothes characterized by violent strangeness or difficulty in movement, since the main aim of the designer is the idea which he tackles & displays like the sculptor formulating an artistic beautifying form in space, and a designer had illustrted a design tackling pollution of sea water with oil stains, as the designer likened the model as one of the birds polluted by oil spots. Between this direction & the other, as we previously mentioned & explained, there are a lot of examples of designs the designers of which were affected by imported human incidents & cases when they presented their ideas.

2- POLITICAL FASHION:

The political fashion is uncommon term in the Egyptian culture & when the researcher was exposed to the definition of political fashion, she found that it is fashion related to politics, therefore, the researcher has divided the political fashion into kinds, the most famous of which, is fashion specialized for the great political characters as the country president & the first lady, plus the king, princes & princesses, emperor, & court men, in addition, the ,meaning may be great political characters as the foreign minister, prime minister or the councilor, in other words, each one is in a distinguished political position. These attires could be official & could be freely fashionable, yet the political characters are the ones wearing them in public occasions, there is another kind of political fashion imported in the applied study of this research, which is the expressive fashion, it mainly aims at expressing special political events through fashion designs, as we previously stated, they are varied in their ability to be worn in the normal life.

There is a third section which widely appeared in the last years among different countries in the world, the political instability which several countries suffer from, helped in its appearance & circulation, at the beginning, this kind of costumes & attires explicitly appeared during the World War 1931 – 1945 as they were the first propaganda clothes greatly produced in USA, England & Japan, these designs are included in museums nowadays, described then as a reflection of the public culture. These clothes are distinguished by the design simplicity, execution easiness, plus the usage, as the design

depends on placing slogans, symbols & writings illustrating that their wearers belong to a specific political trend, & these drawings were printed on casual wears mostly, T-shirts as they are commonly used during sits up, which is one of the current study objectives, which is registering what Egyptian youth fashion faced of renewal during & after the revolution of 25th of January 2011. In addition, clothes supplements of hats, scurf & veils were widely used, plus accessories & jewelries as rings, necklaces & bracelets on which a phrase or logo of the political group to which the design wearer belongs & supports, is prevailing & predominant.

Additionally, there are political clothes the purpose of which not belonging to a specific party but the purpose of which is illustrating national tendency & belongingness in general.

3- EGYPT FASHION IS AFFECTED BY MODERN VARIABLES (ANALYTICAL DOCUMENTARY STUDY)

The researcher presents this study through collecting some of clothing forms & figures among Egyptian society individuals during & after 25th of January 2011 until the time of the research display, in other words, nearly, at the end of October 2013 for what the researcher found of necessity of registering the Egyptian society individuals influence, & the influence forms on their clothes in a period of the most important historical periods which Egypt is passing through. The researcher presents the documentary photos in reality – some of which were photographed by the researcher & the other were collected from the internet – & briefly characterizing these clothes forms & figures.

The researcher describes the features of these clothes through the following analysis :

- During the revolution of 25th of January 2011, representing some people wearing (bottles- cartoons- bread- plastic pieces) on their heads what protects them from stones shoot which was spread during the sit-ins in squares among the supporters & those opposing to the deposed president Mubarak.

- Revolution phrases on T-shirts as (I was there, in Tahrir Square- Yes we can- youth really love Egypt – The flag of Egypt and Tunisia together) , political movements recently appeared as 6th of April Youth movement as, there are T-shirts bearing their slogan (Youth Loving Egypt).

- Expressing the revolution through young women and men who are wearing

ancient Egyptian costumes symbol of civilization rising, T-shirts including Egypt flag & a phrase (Ultras Morsi) which is a movement resulting from the arrest of the isolated president Mohamed Morsi on 3rd of July 2013.

- Designs including phrases as (Egypt..my love- Liberaty Square_ Youth of freedom- 25 Januaryry.)

- Phrases as (25 Januaray- I'm the pepole) and the flag on T-shirts .

- T-Shirts with words (Love you Egypt- Let's build it).

- Revolution youth with V mask, symbol of revenge with Egyptian flag, on the right a T-Shirt written on it (we are people of liberty)

- A man supporting the Egyptian army wearing T-shirt with the Egyptian flag colors, a scurf with the flag colors & a headband on which the general photo is printed, there is one of the Islamic trend supporters holding a T-shirt bearing the sign of Rabaa on which written the word (Egyptian) & a youth wearing a T-shirt bearing a phrase (Revolutionist.. Arabian) & wearing a mask (V) the sign of sanction.

- One of the persons opposing the isolated president Mohamed Morsi drawing a colorful mask on his face representing Egypt flag, a man of the army head supporters putting the military shoes on his head expressing his obedience & compliance to the Egyptian army, a girl wearing on her head, a band with Egypt flag colors & name (Egypt).

-A girl wearing a T-shirt bearing the phrase (Rebellion or Tamarrod Buds) in green color &, a youth supporting the isolation of the isolated president Mohamed Morsi wearing a T-shirt bearing the phrase (We Will Continue Our Revolution) as a sign to 30th of June, girls wearing black garments & clothes including consolation phrases to one of the martyrs & that they will continue the revolution demonstration after him.

-On 30th of June 2013 representing a sect of the Egyptian people supporting the isolation of the president, a youth wearing a necklace with a strip of the flag color hanging down it, a red card bearing the word (leave) which means the desire to banish & expel the president from his position, in the middle, a youth wearing a torn piece of jute & putting on his head, a shaggy hair wig & holding in his hand, a board written on which the phrase (The next Destiny of Egypt) which means that Egypt destiny is

returning back to stone man era if the president Mohamed Morsi continues in ruling the country, an Egyptian woman putting on her head, two strips, one in red color on which written the word (leave) & the other in black color on which written the word (Al Ekhwan)mean Brotherhood party in Arabic.

-One of the youth supporting the isolated president wearing an umbrella in the Egyptian flag colors, followed by an image of a child wearing a T-shirt on which written the name of the isolated president Mohamed Morsi & a slogan for the renaissance project, then a youth wearing a T-shirt on which written the phrase (We Will Live honorably), after that an Egyptian player getting a medal in Judo championship wearing a T-shirt bearing the sign of Rabaa.

-Some supporters of the president Mohamed Morsi on 4th of November which is the first day of the isolated president trial sessions, at the right, a youth wearing the sign of Rabaa, a lady of the Islamic trend holding a T-shirt bearing the sign of Rabaa & wearing round her neck, a card in the Egyptian flag colors bearing the isolated president photo, the word (Rabaa) on a headband.

- Egyptian pop stars supporting General Sisi.

- General Sisi supporters ..phrases on T-Shirts(The army and the people with you Sisi- I love you Sis) .

- Illustrating the different directions of the Egyptian society individuals, a man wearing a T-shirt bearing the phrase (Martyr Project) as a support to Rabaa & Al Nahda sit-ins, an Egyptian youth wearing a T-shirt above whom there is a photo of the army head & a phrase (No to Extremism) & a demonstration by bikes of the supporters of the isolated president Mohamed Morsi & on their clothes, is written a phrase (Against Military Coup)

-Rabaa Adwia Square before the disengagement..men and children are wearing white cloth as a symbol of ready to die for principles.

- Accessories by the name of General Sisis.

- Clothes and masks had been appeared since 25 January revolution of Egyptian black look.

- Masks of Egyptian Black blok.

- Egyptian black Block masks (revenge) .

- Egyptian youth with mask V symbol of revenge.

- Egyptian protesters wearing masks of dead protesters by police.

PROPOSED DESIGNS (APPLIED STUDY)

The researcher has placed a group of fashion designs in form of sketches, plus she has executed three of them, these designs were expressing the instability state which Egypt suffers from, in the last period & the division of the Egyptian society individuals between supporter & who opposes all events courses to which the country is exposed, & hereafter a brief explanation for the meaning imported beyond each design.

SECTION ONE: SKETCHES

Design (1): on the right, the upper part is in white color as a symbol of purity & weakness, & on the shoulders, there is an abstraction of the bird wing, plus surrender, the lower part in the Egyptian flag colors on which there is a drawing of spider webs, then the third part is in the form of web-like cage which means that the nation is like a bird falling in webs capture impeding it from flying, design (2): in the middle, there is a modification of the pharaonic waistcoat in flag colors & at the bottom of which falling fake drops of blood to reveal the deep wound & the crisis which Egypt suffers from, design (3): on the left, there is a design in plissé golden color expressing the personality of one of ancient Egypt queens & a black hand uncovering one of its two breasts, in this design, there is a sign that what happens in Egypt of division passively affects Egypt pride & rising & allows to disclose its private parts & stain its good reputation.

Design (4): on the right, there is wholly an embodiment of the Egyptian flag encircling around the design, a thick rope ending with an anchor expressing the country movement & progress paralysis under the auspices of the current striking events. Design (5): in the middle, there is wholly the Egypt flag with the existence of two sleeves so long that they reach the floor to express rising but the whole design includes cuts & drawing of cracks, splits & clefts as if the Egyptian rising is about to collapse, design

(6): on the left, there is the Egyptian flag on the body splitting it, hanging down, two notching balls symbolizing the conflict & difference which happen to the Egyptian people individuals in the last period.

Design (7): on the right, there are symbols of civilizations which Egypt passed through, Pharaonic civilization is represented by the waistcoat on the two shoulders & the belt in the middle, the Islamic civilization is embodied by ornaments & embroideries on the lower part & the whole design is hanging on a cross as if the current events represent an assassination off civilizations which Egypt passed through, design (8): the design embodies the state of economic deterioration & degeneration which the country suffered & is suffering from, during the instability period which the Egyptian people live, as the design is designated of patched cloth, encircling the body pieces of handkerchiefs & the design is inspired from the handkerchiefs sellers who become greatly predominant & prevail aiming at begging from people.

SECTION TWO: DESIGNS ON ARTIFICIAL MODEL DRESS

Executed Design (1): the design was executed of materials: Vaseline & metal chains symbolizing enchainment & the notching ball symbolizes the state of conflict & difference existing among the people individuals between supporters & opposing the affairs courses.

Executed Design (2): The design includes the Egyptian flag in form of strikes to express the state of perplexity & instability which Egypt suffers from, with the existence of a rope hanging down which a piece of foam in form of rocks to express the heavy troubles & difficulties which surround the country & the anchor to paralyze the movement as if what happens, will cause Egypt drowning.

Executed Design (3): The design is of the golden satin the bottom of which is dyed in red & black colors as a symbol of the blazing fire, waistcoat & belt as a sign of the ancient Pharaonic civilization & their design was in the flag colors to express the modern era & the black colored hand in form of a glove of rubber revealing one of both breasts as a sign of rape, disclosure of private parts & violation of rights.

RESULTS OF STUDY

The results were represented in the following:

1- The study proved that the Egyptian youth fashion has changed & some renewals have affected it during the revolution of 25th of January 2011 & after, these renewals explicitly appear during the demonstrations & sit-ins & they are represented in form of designs, slogans, writings almost printed on the casual wears & T-shirts, plus the youth usage of some clothes supplements, make-up tools & sets, to illustrate their political trend as necklaces, bracelets & scurf & this result is the answer of the question stated in the research.
2- The researcher managed to propose a group of designs expressing the state of perplexity & instability which the Egyptian people live during the revolution of 25th of January 2011 & after, of important political events which are greatly influencing Egypt history. This result is the answer of the second question of the research.
3- The opinions of the arbitrators of fashion professors & its designers approve the ability of the proposed & executed designs to express the renewals taking place in the Egyptian society political field in the last period.

RECOMMENDATIONS OF STUDY

1- Changing the current study from its researching form to a volume, plus establishing an exhibition specialized for the revolution clothes worn during January Revolution & after, since it is considered an important part expressing the Egyptian people culture in an important period of the Egyptian history, provided that the exhibition must include photos, images & actual pieces of clothes of attires, clothes, supplements, accessories & jewelries.

2- Forming a work team to collect the pieces of clothes & the old affiliating supplements, plus jewelries of the Egyptian families since the researcher noticed that it is possible to establish a museum including the pieces of clothes representing the beginning & middle of the last century of the current Egyptian families before they are completely destroyed, & to include them in the Faculty of Home Economics – Clothes & Fabric Department, then this experience becomes pioneering for all kinds of the Egyptian possessions for all people.

Sketche 1

Sketche 2

Sketche 3

Sketche 4

Sketche 5

Sketche 6

Sketche 7

Designs on artificial model dress 1

Designs on artificial model dress 1

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INTERFACE MODA E ARTE NO DESENVOLVIMENTO DE NOVAS COLECÇÕES

ALEXANDRA CRUCHINHO
Instituto Politécnico De Castelo Branco - Escola Superior De Artes Aplicadas, Cieba, Portugal

RESUMO

Perceber como é que a Arte tem influenciado o Design de moda e como é que este interface se manifesta no desenvolvimento de novas coleções ou novos produtos de moda é o principal objetivo deste trabalho. Procurou-se identificar alguns exemplos de recurso à arte por designers de moda no desenrolar da história do vestuário ao longo do século XX bem como de designers da atualidade. Casos como o de Elsa Schiaparelli ou de Ives Saint Laurent serão mencionados como os designers de Moda do século XX pioneiros em recorrer à valorização da arte nas suas criações. Alexander Mcqueen também é referido como um exemplo a considerar na análise das coleções e das performances realizadas em algumas apresentações em passarela. Serão ainda recolhidos exemplos de designers nacionais.
Em última análise apresentam-se projetos de jovens designers também influenciados por conceitos artísticos. O tema apresenta-se pertinente na medida em que pretende identificar e explorar o processo de reinterpretação da Arte e do trabalho de artistas contemporâneos de referência por parte de designers que marcaram a história, que marcam a atualidade e de jovens designers que estão a entrar no mercado. Através de uma metodologia de análise de conteúdo selecionaram-se alguns exemplos que serão analisados deixando registo de novas ideias e abordagens da arte e suas influências no trabalho do designer de moda. Apresenta-se assim, como questão de investigação a necessidade de identificar

a diversas interpretações e influências da arte por designers de moda na criação dos seus produtos. Os resultados obtidos deverão representar uma pequena mostra do desenvolvimento de projetos criativos baseados num interface entre a Arte e a Moda.

PALAVRAS-CHAVE
Moda, Arte, Interface, Coleção

INTRODUÇÃO

Interface Moda e Arte foi o tema que se apresentou para o desenvolvimento de uma pesquisa e que nos despertou o interesse. O tema revela-se intemporal considerando as diversas manifestações e interpretações que têm vindo a ser realizadas ao longo da história e na atualidade da arte na moda.

Perceber como é que a Arte tem influenciado o Design de Moda, como é que a relação Moda e Arte se manifesta na realização de novas coleções ou produtos de moda; Analisar o processo de reinterpretação da Arte pelo criador de Moda bem como o trabalho de criadores que, ao longo da história da moda mostraram inspiração na Arte; Identificar casos nacionais e em meio académico com inspiração em movimentos artísticos ou em artistas plásticos, são os objetivos propostos a alcançar com a presente pesquisa.

A metodologia de investigação tem como base uma análise de conteúdo e incide numa recolha de informação para a demonstração da influência da Arte na Moda. Numa primeira fase a pesquisa incide numa recolha de informação pela revisão bibliográfica que permite a identificação dos exemplos, na história do vestuário e da moda, de influência da Arte na Moda. Esta primeira pesquisa é seguida por uma recolha de exemplos de coleções/produtos de moda concebidos por designers contemporâneos nacionais cuja inspiração incidiu na Arte para a definição de um conceito a ser explorado. A pesquisa foi realizada através dos sites das marcas ou dos criadores e dos sites oficiais das semanas de moda nacionais onde se identificaram os criadores que, na última coleção apresentada (Verão 2014), apresentam um conceito cuja Arte é uma influência.

Por fim, foram identificados exemplos de Projetos de coleções de Jovens Designers que, em meio académico, apresentam conceitos para o desenvolvimento das suas propostas de coleção inspiradas na Arte.

De facto, a investigação para o desenvolvimento de coleções é a razão da identificação de temas que influenciam a definição de um conceito forte para a concretização de um projeto consistente.

Tal como refere Galliano, citado por Seivewright (2008, p. 7) "A investigação criativa é o segredo e o truque que realça todo o design original."

Para o desenvolvimento de uma coleção o designer segue uma metodologia de trabalho que lhe permite, passo a passo concretizar uma coleção consistente e coerente com um conceito que surge de uma pesquisa exaustiva e constante na busca de elementos vários que possam influenciar o seu trabalho.

De acordo com Seivewright (2008) a concretização de uma coleção tem início numa primeira fase da metodologia designada de investigação onde o designer recolhe informação. A pesquisa procura inspiração ao nível das formas, estruturas, pormenores, cores, exturas, estampados e adornos e o designer pode sofrer influências de vários campos nomedamente históricos, culturais, sociais, artísticos e de tendências.

A inspiração do designer surge então, a partir de diversas fontes, nomeadamente livros, revistas, cinema, música, teatro, história, viagens, arquitetura, mundo natural, culturas, museus, Arte e é a partir destas fontes de inspiração que o designer vai escolher e definir um tema ou conceito.

A definição de um "bom Conceito" é a essência de uma coleção consistente que se revelará única e pessoal para o criador podendo este ser um conceito abstrato, conceptual ou narrativo. Com a definição de um bom conceito o designer poderá então levar à prática toda a investigação realizada que se revela nas silhuetas, proporção e linhas, nos pormenores e cores (Seivewright, 2008).

AS MANIFESTAÇÕES DA ARTE NA MODA AO LONGO DO SÉCULO XX

Tal como refere Volt, citado por Lehnert (2001, p. 30), "A Moda é uma Arte, como a arquitetura e a música."

Ao longo do século XX foram várias as manifestações na moda que revelaram influência e inspiração na arte. Porém, de acordo com Matharu (2011) durante muito tempo existiu uma relação muito próxima entre a arte e a moda e os artistas, sempre usaram a moda na sua pintura e na escultura para a representação da sociedade.

É no Renascimento que os artistas, nomeadamente Antonio Pisanello, começam a ter um papel mais importante na moda considerando que, nesta época, trabalharam de forma ativa na criação de tecidos e adornos (Matharu, 2011).

Porém, é no século XX que estas manifestações se tornam mais regulares e constantes e são mais representativas da influência da arte no processo criativo dos designers de moda.

Nos anos 20 Sónia Delaunay é a protagonista de uma aliança entre a arte e a moda e é ela quem transpõe uma realidade pictórica muito própria para o vestuário através da criação de peças para o seu uso próprio e do marido. (Seivewright, 2008)
"Partia dos cortes existentes e conjugava-os com padrões por si idealizados." (Seivewright, 2008, p. 30).

Sónia Delaunay representava a ideia de esboço nos vestidos por si concebidos, alguns deles tinham inclusive, poemas estampados ou bordados. Também mandava aplicar formas geométricas sobre os tecidos em vestidos cuja forma respeita a silhueta direita da época. A aproximação da arte com a vida quotidiana através da produção de vestuário vem representar a ideia principal dos movimentos vanguardistas da época em que a artista se destaca. (Seivewright, 2008).

Nos anos 30, destaca-se Elsa Schiaparelli na aliança entre a arte e a moda. A criadora protagoniza uma forte ligação da moda às artes plásticas, nomeadamente a pintura. No seu trabalho revela-se a colaboração que estabeleceu com vários artistas protagonistas do movimento artístico surrealista como era o caso de Salvador Dalí. Elsa Schiaparelli transpunha para os seus tecidos e formas criações muito próprias de Dalí. Por não ter como objetivo principal modelar o corpo humano, em sintonia com os ideais de beleza da antiguidade a criadora procurava, com as suas propostas, concretizar o fator surpresa que a arte vanguardista defendia sendo exemplo disso o vestido com gavetas inspirado na obra de Dalí de 1936 "Armário antropomórfico com gavetas" (Seivewright, 2008).

A sua aposta na cor, no adorno, na fantasia e nos elementos lúdicos veio a ser apoiada mais tarde por Paul Poiret que, em 1929, também sofreu influência dos surrealistas e a teatralidade, representada pela utilização de novos materiais como tecidos sintéticos e o celofane para acentuar o surrealismo das peças, foi, mais tarde, retomada por Karl Lagerfeld (Seivewright, 2008).

Yves Saint Laurent na década de 60 é quem se destaca na apresentação de coleções inspiradas em movimentos artísticos da modernidade e da arte contemporânea. Em 1965 apresenta uma coleção de Vestidos Jersey, de corte direito, com padrões estampados que representam reproducões do estilo de Mondrian e em 1966 apresenta uma coleção inspirada em Andy Warhol e Roy Lichtenstein composta por vestidos de linha simples e corte direito com formas geométricas, vestidos Pop-Art (Seivewright, 2008).

Ainda durante o século XX, os fotógrafos exploraram esta relação entre a arte e a moda tornando-se, esta última, um aspeto importante da cultura moderna (Matharu, 2011).

INTERFACE ARTE E MODA NAS CRIAÇÕES NACIONAIS DA ATUALIDADE

Após uma pesquisa através das páginas onde constam as informações, visuais e escritas, sobre as últimas coleções apresentadas por criadores nacionais em semanas de moda em Portugal, identificaram-se dois criadores que apresentaram as suas coleções na edição 41ª da ModaLisboa – Verão 2014, e que referem a arte como inspiração para a definição do conceito ou tema da sua coleção sendo, Aleksandar Protic e Ricardo Preto.

Aleksandar Protic apresenta uma coleção inspirada numa escultura – Icarus da Zlata Markov. A coleção reflete esta influência através da cor, da silhueta e dos materiais sendo predominantes os tons cinza e o preto numa silhueta fluída com tecidos leves.

Ricardo Preto apresenta um conceito baseado na influência da Bauhaus e do hiperrealismo também representada pela escolha das cores, silhuetas e estampados. A coleção com o preto, o branco, o cru como cores predominantes e ainda o verde-esmeralda e azul menta apresenta estampados geométricos, marmoreados misturados com a representação de rostos e mãos da arte clássica em silhuetas fluídas e volumetrias (ModaLisboa, Site, consultado em Outubro 2013).

INFLUÊNCIA DA ARTE NAS COLEÇÕES DE JOVENS DESIGNERS

Apresentam-se alguns exemplos de influência da Arte na Moda, nas propostas de coleções de Jovens designers em meio académico.

Mónica Vicente, procurou a sua inspiração na pintura de M. C. Escher, "na procura incessante de sabedoria através das suas obras a preto e branco" (Vicente, 2013). O tema Walking Sculptures é explorado através do recurso ao preto e branco como cores da coleção, à técnica para a manipulação do tecido e das peças e às silhuetas desenvolvidas.

Trata-se de um projeto conceptual que pode representar uma nova tendência inerente ao aspeto visual da coleção.

Figura 1 - Manipulação do tecido (foto da criadora)

Figura 2 - Silhueta final (foto da criadora)

Cláudia Barros inspira-se no Expressionismo alemão de Egon Schiele, no traço grotesco e nas linhas agressivas. De acordo com a criadora, procurou mostrar, através da sua proposta, a forma como Schiele vê as suas musas e o nu.

A coleção apresenta uma paleta de cores de interpretação da paleta do pintor perceptível através de uma proposta de tecido estampado com a representação do grotesco e do apressado dos traços caraterísticos da obra do pintor. As silhuetas andrógenas são complementadas com aplicação de moldes do corpo feminino.

Figura 3 - Ilustração da coleção (imagem da criadora)

Nicole Mamedes propõe uma mini-coleção para a realização de uma produção de moda – Editorial para revista, inspirada no expressionismo abstrato de Jackson Pollock, através da conceção de peças que representam um revivalismo dos anos 50.

A influência da Arte é identificada nos estampados de algumas peças que compõem e acessorizam a coleção.

"A Moda e a Arte, ao longo dos tempos, têm mantido uma relação de proximidade evidenciada através da concepção de produtos de Design de Moda...

Figura 4 - Fotografias da Produção – Editorial (fotos cedidas pela criadora)

CONCLUSÕES

A Moda e a Arte, ao longo dos tempos, têm mantido uma relação de proximidade evidenciada através da conceção de produtos de Design de Moda: de vestuário e acessórios.

A Moda e a Arte, ao longo dos tempos, têm mantido uma relação de proximidade evidenciada através da conceção de produtos de Design de Moda: de vestuário e acessórios.

As influências da Arte na Moda podem revelar-se de forma implícita ou explícita, através da forma (silhuetas), da técnica, da cor, da textura, dos adornos dos produtos e essa influência é evidenciada através da escolha e da definição dos temas ou conceitos das coleções apresentadas.

A presença da Arte na Moda pode revelar-se pela inspiração do Designer na definição de um conceito baseado numa manifestação artística, num movimento, num artista, na sua obra mas também pode ser a reprodução de uma obra diretamente sobre uma peça como por exemplo, com recurso à estampagem do tecido onde a "obra" é reproduzida sem qualquer intervenção ou interpretação do designer.

Apesar do avanço dos tempos, e independentemente da época em que se vive, vão sempre surgindo múltiplas interpretações de movimentos artísticos e obras de artistas reconhecidos e se algumas vão ficando como marcos ao longo da história do design de moda, outros, contemporaneous e jovens designers, buscam a sua inspiração em fonts muito diversificadas continuando a ser uma constant a influência da Arte na Moda.

Moda e Arte representam uma aliança intemporal que se vem verificando ao longo de toda a sua história até à atualidade e independentemente do contexto cultural, económico e social.

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THEORY COMMUNICATION

TEORIA

QUE ESPERANÇA PROJECTUAL?

Francisco Paiva
Faculdade de Artes e Letras / LabCom
Universidade da Beira Interior

Esta primeira edição da DESIGNA, Conferência Internacional de Investigação em Design que a Universidade da Beira Interior organizou e acolheu obteve um alcance, a diversos títulos, surpreendente. O entusiasmo e a adesão da academia e a pronta resposta dos investigadores ao apelo para apresentação de comunicações ultrapassou largamente as nossas expectativas, dando à interrogação inicial uma clara resposta no sentido de considerar o design coisa pública.

PROPÓSITO DA CONFERÊNCIA

Cedo assumimos o desiderato de questionar o actual momento de incerteza civilizacional que assola a Europa, tentando perceber o grau de envolvimento do design no destino colectivo. A transição de um modelo político-social caracterizado pela prevalência da crítica, de pendor democrático, que reivindicou e proporcionou a melhoria das condições de vida a amplos sectores da população, para o estabelecimento progressivo de uma "aurea mediocritas" que sublima a hegemonia ideológica e económica e neglicencia princípios fundamentais da condição humana, arduamente conquistados, afigura-se preocupante. A Universidade não pode eximir-se de reflectir sobre este momento cultural que atravessamos.

Por outro lado, uma conferência contribui tanto para considerar as diferenças como para perceber os intervalos teóricos e conceptuais que nos separam uns dos outros.

Intervalos que, na voz de Arendt (Qu'est-ce la politique? Le Seuil, (1950-59) 2001, p.40) são bem definidores da política, enquanto espaço de relação entre as diferenças humanas. Nesse sentido, esperamos que a DESIGNA tenha contribuido para extrair sentidos ocultos da prática quotidiana, das rotinas de investigação e de ensino de que laboriosamente nos ocupamos e que tantas vezes nos apartam da sociedade, destinatária da acção dos designers. Todos os que aqui vieram comprometer-se com os seus pontos-de-vista contribuem para que essa "parcela da humanidade" apareça na sua pluralidade.

No actual estado de coisas, o design oscila entre a resposta a programas e enunciados pré-definidos, na sua descodificação e tradução, e a necessidade de interpelação dos princípios, comportamentos e condicionalismos da vida contemporânea. Por esta via, algum design afasta-se naturalmente da pragmática resolução de problemas e centra-se no sentido performativo, na interferência social, persuadindo os indivíduos a aferirem o significado das coisas pelo seus propósitos e efeitos. Atitude em certa medida oposta ao simbolismo idolátrico característico do star-system, desprovido da inquietude que indexa a sustentabilidade à cultura. Tendência cada vez mais evidente na sociedade contemporânea, em que as opções estruturais e sistémicas se decidem na esfera ambivalente dessa conectividade.

A arte tem um poder transformador dos hábitos e das ideias que certamente todos já experimentámos. O design tanto formaliza processos de interlocução como responde a necessidades de produção e divulgação em massa, sujeitando a uma certa codificação – normalização, mesmo – a identidade de conteúdos e bens. Acompanha, pois, a deriva do arquétipo para o estereótipo que caracteriza o ciclo de vida das coisas e das ideias, seja esse processo motivado por alterações na demanda, na tecnologia, ou nos ditames da moda. Aos designers e investigadores pede-se que sejam conscientes dessas múltiplas implicações, tanto no contexto da indústria e da economia como da sociedade e do meio. A dificuldade que muitos sentem em entrar nesse debate evidencia uma lacuna evidente no ensino do design que urge colmatar. Facto bem patente nas (escassas) exposições, em geral centradas no desempenho estético dos bens, mas desprovidas de um entendimento extenso das implicações da criatividade (e da educação) na competitividade económica, na valorização do trabalho e na vida dos indivíduos, mesmo quando esses bens ou serviços se destinam a minorias. Foi esse o alerta de Papanek e de Buckminster Fuller: projectar para as necessidades e aspirações das pessoas.

Num breve esboço do estado do mundo surgem certamente algumas destas preocupações que nos impelem a questionar a coerência, perenidade e domínio das identidades culturais numa perspectiva mais global. A celebração da diversidade cultural é um modo de cosmopolitismo que permite integrar e minimizar a hostilidade para com a diferença, mas que simultaneamente anula particularidades que nos enriquecem. A arte contemporânea continua a fazer prova dessa alteridade, ao afastar-se de uma certa estetização exterior para nos propor, em variadas circunstâncias, uma espécie de ética da predicação que justifica a intensificação do diálogo entre domínios artísticos.
Se, por um lado, as economias criativas associadas à inovação e ao desenvolvimento integram, a par do design, campos de acção que vão desde as artes plásticas e performativas ao entretenimento, olhando um pouco para o nosso País descobrimos que o valor financeiro do QREN aplicado em design, com a finalidade de, alegadamente, "melhorar a performance e criar emprego" é ínfimo. Embora se considere que o design faz parte do "Sistema de Incentivos à Inovação", como um serviço relacionado com o apoio técnico, continua a aparecer nos planos de inovação como uma das principais debilidades da generalidade dos sectores nacionais na competição internacional. A par desta insuficiência, embora de maneira difusa, generaliza-se no senso-comum a ideia da interdependência entre economia e cultura, que conduz mesmo à integração do design nos denominados "factores intangíveis de competitividade".

Portugal precisa de Design! – A sociedade beneficia directamente do investimento criativo e a sobrevivência de muitas indústrias depende da capacidade de inovar em produtos e serviços. A formação de designers favorece o bem estar social, directa e indirectamente, pela resposta a problemas concretos, pela criação de valor e pela elevação de horizonte de expectativas. Não obstante, a imagem que hoje se obtém do país através da arte e do design é bastante melhor que no passado, e é sobretudo muito melhor que a de outras áreas de actividade que continuam a sorver todo o tipo de recursos, inclusive na universidade. Tal destaque deve-se essencialmente à perseverança dos criadores e investigadores, tanto mais atentos à responsabilidade da sua acção quanto assistem à desesperança de amplos sectores de actividade, arrastados pelos clichés sobre inovação e empreendedorismo, mas cujo modelo produtivo preconizado depende mais da precariedade laboral que do investimento no talento.

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PORQUÊ MALDONADO?

A escolha de um autor como Tomás Maldonado, que se interroga sobre o futuro da modernidade, tendo bem presente a necessidade de desenvolver um pensamento crítico de base ecológica para o avanço da prática projectual é, no pragamatismo dos dias que correm, uma opção arriscada.

Maldonado reflecte sobre as tendências deste antigo debate, confrontando textos de autores tão diversos como Simmel, Behrens, Van de Velde, Gropius e mesmo Muthesius, no escopo de evidenciar a interdependência dicotómica entre arte vs. técnica e estética vs. indústria, presentes na crítica hodierna, cujo alcance não se esgota nas políticas da competitividade e que quando cruzadas com a problemática ecológica evidenciam a interdependência entre bem-estar e cultura.

A capacidade de projectar liga o homem à história. O desenho consegue dar forma ao que nasce de um programa, mas vai mais além. Consegue integrar no que se transforma a livre e espontânea dimensão da esperança. Da utopia que se persegue e se torna instrumental no compromisso que estabelecemos com o mundo. É esse o poder do projecto que encontramos em muitos autores, no apelo que fazem à adopção de uma metodologia lúcida que conduza da informação à invenção.

O nosso modelo de ensino do design dificilmente responde a estas expectativas, na medida em que continua a oscilar entre uma estruturação curricular que proporciona uma formação de cariz profissionalizante e um modelo de estudo próximo do das belas-artes, cuja pertinência para a aprendizagem da complexidade e das diversas especialidades que confluem no design se baseia mais na tradição que na evidência da investigação de experiência feita.

Esta conferência assume precisamente o propósito de reflectir sobre o desempenho da investigação em design na estruturação de um campo de conhecimento baseado na criatividade, que legitimamente encontrou o seu lugar na academia mas de cujas regras, ratios e sistematicidade nem sempre participa, apesar da reconhecida importância que reiteradamente lhe atribuem áreas afins, desde a arte e a comunicação às tecnologias.
Como verbo e substantivo, o design acentua a dialéctica do concreto. A Esperança Projectual veio precisamente alertar para a necessidade de alocar a criatividade à melhoria das condições de vida, aferindo o design pelo parâmetro ético, na charneira da utopia, entre o sujeito, o ambiente e a sociedade.

O NOSSO DESÍGNIO

A função fenomenológica do design aparece naturalmente aliada à sígnica - o criar ao ver e interpretar. Nas sociedade de consumo o design interpõe-se directamente entre o indivíduo, a política e a economia, pela intrínseca capacidade de dar forma ao desejo, de criar "necessidade" e aculturar o prazer. Ora, estando o governo das coisas directamente ligado ao governo das pessoas, percebe-se melhor tanto a ambição de alguns artistas liderarem a "revolução" como o apetite do poder pela "regulação" da arte e pelo controlo das condições de produção, seja pela via dos standards de qualidade seja pela desvalorização dos salários.

Nas vertentes visual e material, o design lida hoje com as previsões apocalípticas provocadas pela sobreprodução, pelo esgotamento de recursos, consequente aumento de resíduos e desperdício energético. Previsões fortemente agravadas pela rápida obsolescência dos bens, num modelo económico assente na intensificação da mão-de-obra. Se estes problemas acentuam a responsabilidade social dos designers, também têm contribuído para o desenvolvimento de estratégias de inovação que almejam lograr novos equilíbrios entre o modelo de consumo e de especulação financeira que define a ordem económica actual, assente na dissociação territorial entre o acto de conceber e de reproduzir. Perante a emergência do sector terciário o custo unitário do trabalho não garante a almejada competitividade. Consciência, porém, que não tem conduzido muito à procura de alternativas, que terão necessariamente de assentar na qualificação do percurso escolar e nas múltiplas formas de cooperação criativa, só possíveis com o combate às desigualdades e a melhoria das qualificações.

O alargamento da prática projectual a áreas menos convencionais permite superar alguns estereótipos que afectam o mundo do design, tais como a classificação de arte menor ou aplicada, de pendor pragmático, onde o imperativo funcional parecia sobrepor-se à consciência crítica perante o concreto campo operativo e existencial do designer: a criação de realidade. Realidade que tem mudado muito, é certo, em especial por força do desenvolvimento dos meios e tecnologias de informação e comunicação visual, cujos interfaces não cessam de reconfigurar o contexto material da experiência quotidiana e que muito têm alterado os hábitos e processos criativos.

Neste quadro, a DESIGNA 2011 procura responder a duas dúvidas fundamentais. A primeira será a de saber se o campo do design (gráfico, visual, multimédia, industrial, de moda, etc.) apresenta um lastro disciplinar ou académico comum, congregando um conjunto de pontos de vista inter e transdisciplinares que permita continuar a

pensar o design em sentido extenso. A segunda será a de perceber como pode o design contribuir para desbloquear alguns impasses transversais na sociedade contemporânea, já que nos parece que ao demonstrar que as soluções mais interessantes não são as materialmente mais ricas, o design abre um potencial de transformação da sociedade, mesmo nos países mais pobres, dependentes da importação de bens e serviços do exterior e onde a revolução da informação pode ainda não se ter imposto à inconclusa revolução industrial, assim a necessidade conduza a uma praxis inconformista e transformadora, capaz de fazer do design uma arte implicada.

O mosaico de contribuições aqui congregado denota esse compromisso com a esperança, enunciado por Bloch (The Principle of Hope. MIT Press, (1938) 1995) como uma aposta no desempenho utópico da função, do prazer e da crença, em certa medida patente na diversidade intrínseca aos quatro painéis temáticos: Teoria, Comunicação, Produto e Moda. Um panorama suficientemente sincrético da investigação em curso nestas áreas, que apela precisamente à urgência da teoria, provando que o design se faz com ideias, mesmo quando os números parecem devorá-las.

É, pois, hora de agradecer a contribuição dos autores das comunicações e todo o empenho dos membros das comissões executiva, científica e de referees, que me cumpre exaltar e reconhecer. O programa foi bastante favorecido pela presença dos oradores convidados: Sheila Pontis, Inma Jiménez, Giovanni Conti, Jorge dos Reis e Renato Bispo, que generosamente acederam ao nosso convite.

THE ROLE OF DESIGN: YESTERDAY AND TODAY

Sheila Pontis
London College of Communication
University of the Arts London

ABSTRACT

To some extent society, world wars, technological developments, and economic and political milestones affect the way design approaches to problems. Since the beginning of the 20th century, the design discipline has gone through different periods in a way of adapting to these external changes. Design processes, problem-solving strategies and, thus, final solutions have evolved from being aimed to sell products and services, and achieve change, innovation, and invention to achieve effectiveness above all. Nowadays, due to economical crisis, technological development, the creation of new communication media, and different societies' requirements, the structure of work teams and development of design solutions is changing very quickly and becoming more complex every day. Design teams have adopted a multi and interdisciplinary approach to decision-making and problem-solving, which involves the work of professionals of a wide range of disciplines in the development of each project, such as marketing, design, engineering, technology and communication. Designers are no longer expected to be in charge of everything and have all necessary skills to develop an effective solution. Collaborative design (co-design) teams are becoming a common structure to solve design problems. As a consequense, the emphasis of design is shifting towards more conceptual approaches than before, resulting in more complex decision-making processes and problem-solving strategies. This paper gives an overview of three key periods within the modern history of design, and highlights the characteristics and most relevant concerns of each of them. After this, the shift in design towards concep-

tual design is introduced as a key change of the most recent period. The modern conceptual design stage is described as a complex structure, composed by rich levels of analysis, actions and tasks specifically defined to tackle current design problems. Using the information design conceptual stage as a case study, key steps are explained. Finally, the analysed model is proposed as one of the most appropriate to be adopted in the present times.

KEYWORDS
Multidisciplinary Design, Conceptual Design, Co-Design

INTRODUCTION

DESIGN and society are deeply connected. There has been a constant need for changing or developing new design solutions generated by the new functions of design in response to the new societal demands (Cross, 2000). Each historical period has had its own needs, for which design has adapted and developed specific problem-solving strategies to address them. Thus, the design process has been in constant change adapting to new and different requirements. In the first part of the paper, the modern history of design is analysed to give an overview of how social, economic and political changes have influenced the evolution and current role of design. During the first periods of the modern history of design, prototyping stages were at the centre of all concerns, while in more recent periods, attention seemed to have been turning to conceptual design stages. Among the design community— students, researchers and professionals—this shift of interests seems to be intensified as a consequence and a way of adjustment to the social and economic situations of this period. Building on this, the paper presents a complex conceptual design stage, composed by rich levels of analysis, actions and tasks, specific defined for tackling design problems of the present days. Finally, the information design conceptual stage is presented as a case study and proposed as a model, which could be extrapolated and applied to solve a wide range of design problems.

MODERN HISTORY OF DESIGN

Throughout the 20th century, three main periods can be identified (Cross, 2000, 2007) according to types of design problems, designer's dynamics, methodologies, and problem-solving processes. These three periods are explained below.

EXPERIMENTAL DESIGN (1900-1960)

The early 20th century was a time of changes in social, political, cultural, and economic life that radically altered several aspects of societies. Changes on the socio-political aspect were followed for that of scientific and technological developments. In addition, the outbreak of the First World War (1914-1919) changed the way life was seen and understood in Western civilizations. In this context, 'graphic forms of communication experienced a series of creative revolutions that questioned their values, their approach to the organisation of space and its role in society' (Meggs, 2006:231).

At the end of this period, these changes were the trigger for new ideas, and an increasing desire for exploring the visual potential of two dimensional design solutions. Moreover, the invention of the first computer in 1944 made it possible to test and experiment with various visual techniques and languages (Pontis, 2007). These advances in working tools and methodologies enriched design solutions and industrialised their development, while generating new paradigms. On the one hand, technology led to new uncertainties, which generated an interest in pursuing studies related to rational and systematic approaches to design. While other arisen challenges were not related to visual techniques, but to finding ways to improve communication and understanding.

DESIGN SCIENCE REVOLUTION (1960-1980)

In the second period, interest was centred in defining systematic ways of designing. Professional designers aimed to define analytical and teachable theories and methods to systematise design processes. A design method was defined as a type of problem-solving procedure, technique or tool for designing which was aimed to increase designers' capabilities, helping them to generate more considerations than they could do alone (Gregory, 1966; Cross, 2000). During this period, creativity was minimised for rational decisions. Design stages became the objects of analysis, and design solutions were developed following rational decisions. Both ideas and design processes were based on strictly defined procedures, actions and stages.

The quality of design outcomes seemed to freeze as a consequence of the strong rational emphasis together with the increasing technological development that started in the previous period. Digital improvements reduced dramatically production times. Computers became powerful and indispensable tools that facilitated the work

needed to achieve final design solutions, increasing the possibility to easily develop a wide vary set of solutions. However, these technological tools standardised the quality, and narrowed the diversity of design outcomes.

MULTI AND INTERDISCIPLINARY DESIGN (1980-2011)

The deep interest in methods greatly decreased during the 1980s and 1990s, and replaced for a broader interest in understanding design and tackling different types of problems. On the one hand, researching on design became the centre of design environments, supported by academic institutions and research communities from different fields, and set the basis for the beginning of scientific design research (Schneider, 2007). Design research communities, spread in the 1990s at European universities and colleges, that started to grow at the end of that decade, became academic referents. In addition, these communities integrated key aspects of more experienced scientific disciplines (Cross, 2007) to enrich their methodologies and, research and problem-solving processes.

On the other hand, design aims started changing from being merely about selling a product, a service or creating artefacts, to being more related with the development of strategies and making sense of situations. Creativity evolved from being understood as 'change, innovation, invention, new ideas and new alternatives' (de Bono, 1999:111), to being defined as the 'effective application of old ideas' (de Bono, 1999). Solutions did not have to be new but to solve a problem. 'Effectiveness rather than novelty' would be the new motto.

This new approach of design is demanding a need for both more specific design expertise and new skills not exclusively related to the discipline. As a consequence the role of designers has also been adapted to these new needs. The role of designers seems to have evolved from creators of design artefacts to facilitators of dialogue, collaboration, and understanding. As an example, design skills seem to have become tools to help people make sense of things by mapping complex situations and drawing meaning from data, and thus understanding and making sense of a problem.

Designers' problem-solving strategies have developed gradually from monodisciplinary teams to multi and interdisciplinary team works. Professionals from different disciplines are being involved in the development of design solutions, including marketing, design, engineering, technology, social sciences and medicine (see Figure

1). Each of these disciplines has become an indispensable component of the modern problem-solving process. Professinals from different backgrounds work together during the initial stage of the process: the conceptual design stage, to achieve strong foundations for solutions.

The following section introduces the conceptual design stage, using that of the information design discipline as a case study to explain its aim, main tasks and outcomes.

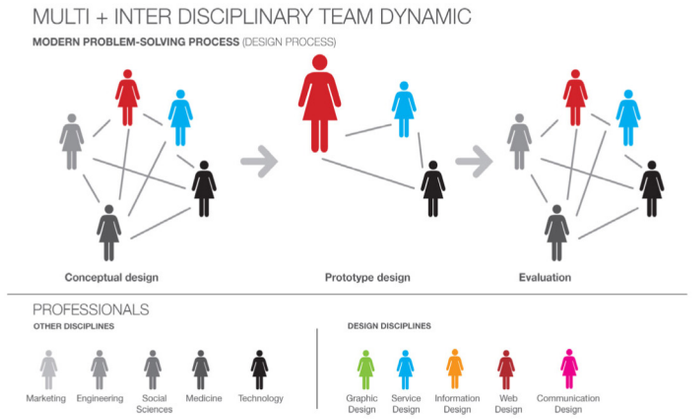

Figure 1 - Currently, design projects are approached from multidisciplinary teams, composed by professionals form a wide range of different backgrounds. During the first stage of the modern problem-solving process (Concepual Design), all professionals work together. During the second stage(Prototype Design), design professionals have the most appropriate skills for the development of visual solutions. In the last stage of the process (Evaluation), actions are shared again for all professionals of the team, as different skills are required.

CONCEPTUAL DESIGN: KEY STAGE OF MODERN PROBLEM-SOLVING PROCESS

Many design process models have been defined for engineer, graphic and information design, but all of these deals with common actions and tasks (see Figure 2). Authors including Bertin (1981), Conley (2004), Visocky O'Grady and Visocky O'Grady (2008) describe these actions and tasks as stages or steps that structure the design process. Thus a stage is defined as a sequence of actions and tasks with similar purposes that often occur throughout the development process of a design solution.

Following Wurman (2001) and Gregory (1966) theories, this paper presents a two-stage structure process, which combines both theories. The two-stage structure described here starts with the comprehension of a problem, the what (conceptual

design) and continues with the search for an adequate visual solution to that problem; the how (prototype design). Conceptual design actions are aimed to achieve clear understanding of a problem, analyse and organise information sources, define content structure and hierarchies. In other words, during this stage is when information is digested and translated into understandable data for designers. Decisions made during this stage are fundamental to obtain highly effective design solutions. It is worth mentioning that decisions about typography, colour and shape do not belong to this stage of the process, as they are related to the how aspects of a solution.
The conceptual design stage structure is highly complex and is composed for specific steps and actions. In the following section, main steps and actions are explained using the information design conceptual stage as a case study.

CASE STUDY: INFORMATION DESIGN CONCEPTUAL STAGE

Information design projects often have a deep level of complexity and volume of information, as they deal with improving understanding and communication. The conceptual design stage is the most important for these types of projects. Its complex structure is composed for six main steps, which are as follows (see the last row of Figure 2 in the previous page for reference):

Step 1. Design brief. At the beginning of a new project, briefs are read and understood.

Step 2. Collecting data. Initial research is being conducted to collect necessary data, information sources are analysed, meeting with clients are being arranged, and intended audiences studied.

Step 3. Familiarising with the subject matter and the intended audiences. Deep analyses are conducted to gather specific insights and obtain detail understanding of the subject matter and audiences under investigation.

Step 4. Processing data. At the end of these three steps loads of information from different sources, sometimes languages, and terminologies composed the raw information to be used for the development of the final solution. During this step raw information is analysed and synthesised to identify and extract the needed information. To process the information, the creation of one or more documents to aid (information) designers before moving on to latter stages of the process (prototype design) is highly necessary.

Step 5. Information architecture model (IAM). As a result of step 4, an IAM (Costa and Moles, 1992) is defined, which 'figures out the overall structure', including 'the hierarchy of information and the master plan' (Baer, 2008:70) and skeletal framework of the final solution. The IAM involves actions to organise high amounts of information in a clear, understandable and usable way for the intended purposes of a project, which will enable the development of a strong initial draft proposal. To properly define the IAM synthesis, classification and organisation are key actions. Information coming from different sources should be 'sifted out' according to the requirements of a project, until the necessary information is identified. After this, a hierarchical structure (levels of importance) of each type of information previously identified should be defined.

Step 6. Draft proposal. Finally, the following actions are focused on more detailed sketches or maps of a possible final solution, which can be seen as initial draft proposals.

IAMs and draft proposals are visualised through diagrams, referred as map-type diagrams (Baer, 2008) and wireframes (Baer, 2008) respectively.

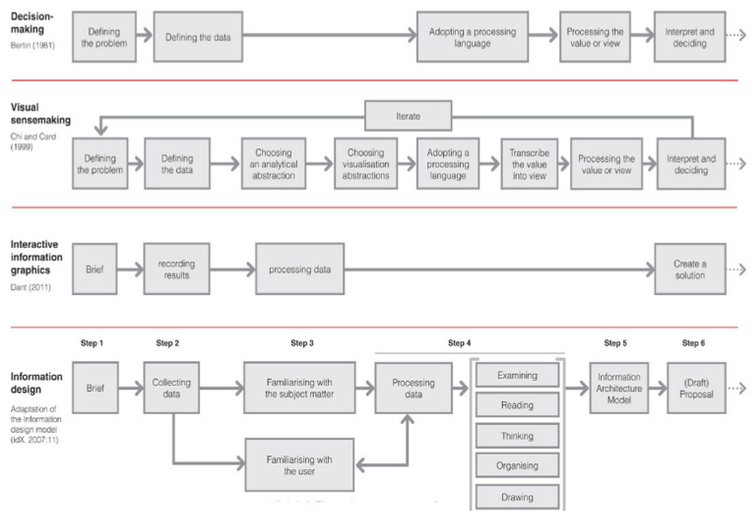

Figure 2
Conceptual design models of different authors from different design disciplines which show the steps needed for the development of a design solution. Adesign process is not simple and straightforward; it may involve overlapping steps or a return toprevious steps as new informations becomes available. Moreover, the steps are not of equal lenght or equal difficulty; each has particular properties according to its function in the design process.

CONCLUSIONS

Design interests and designers' roles are changing. Designers are often working as facilitators of dialogue, collaboration, and understanding instead of only as object generators. To address the requirements and needs of the current period, design problem-solving processes are becoming more complex. Professionals from different disciplines are involved in the most of the development of design projects. Terms like 'parallel thinking', 'collaborative design' are examples of this new design approach.

Solid foundations and well-defined strategies are required to achieve effective solutions; which has resulted in a shift of interest to conceptual design, becoming this stage the essential one for the design and problem-solving process. The conceptual design model discussed here shows the relevance of analysis and understanding to obtain high effective solutions. Its steps could be applied to any design problem apart from that of information design ones. Among other advantages starting a project with information clearly organised and well defined, could avoid later major changes, and thus reduce costs and time. Here relies the relevance of conceptual design actions and the resulting outputs (IAM and draft proposals). They could be extrapolated to define the organisation and structure of information hierarchies in a wide range of design projects. Moreover, draft diagrams (map type diagrams and wireframes) could be a powerful tool for communication and discussion between the parties involved in the design process, including designers, other members of the team, clients, and the intended audiences.

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BIOGRAPHY

Sheila Pontis completed her BA(Hons) in Graphic Design (2002) at the University of Buenos Aires, Argentina. Then she moved to Barcelona where she completed an MRes in Editorial Techniques (2004) and a MPhil (DEA Research Diploma, 2007) both at the University of Barcelona. In 2008 she moved to London to complete her Ph.D. (2012) in information design at the London College of Communication, University of the Arts London.

Sheila has over 7 years of academic and research experience, including lectures at the University of the Arts London (LCC, CCA), University of Barcelona, and Elisava School of Design (Spain), and teaching at the University of Buenos Aires (Argentina). She has also given lectures in international conferences across Europe and Latin America.

Sheila has over 10 years of experience as an information designer, having worked for 2CV Marketing Research Agency, Uscreates, Mind the Ad, Pelagos Consulting, Baalbaki Group, Elsevier Health Division, and Que Fem-La Vanguardia Newspaper, among other companies. At the beginning of 2011, Sheila founded MapCI, a small information design company which focusses on information design research, consultancy and strategy. Sheila is also involved in lecturing and teaching at the University Foundation Programme at the David Game College.

HACIA UNA "HISTORIA SUSTENTABLE" DEL DISEÑO

Andrea Gergich
Facultad de Arquitectura. Diseño y Urbanismo,
Universidad de Buenos Aires, Argentina

ABSTRACT

The problem of the in/sustainability is not only present in the territories of technology, economy and the manifestations of the material world in relation to the design field. It is also present in the cultural and social manifestations of design. Within these fields, the historiography of design can be seen as a field of crossed tensions between local stories of specific groups –at a local or regional level-which are culturally sustainable, and those stories that stand for an overall assessment of the history of graphic design.
In this context, this paper focuses on the need for presenting historical narratives that account for local identities and manifestations, in a quest to build a "sustainable history" of design.

KEYWORDS

Graphic Design History - Local Design- Cultural History – Sustainable History - Representations

Partimos de la hipótesis de que las historias del diseño local –al menos en el caso del diseño gráfico argentino que nos ocupa–, salvo destacadas excepciones, cuentan con escasa presencia en la producciones académicas y de investigación, por lo que la historiografía específica debe recurrir generalmente a bibliografía producida en otros países y otras lenguas. En definitiva, se recurre a otras historias, ya que no podemos contemplar inocentemente la naturaleza discursiva de una ciencia cuyo corpus, además de las fuentes y documentos originales, son en gran medida los relatos y narrativasproducidos dentro de su propio campo. En este sentido, la historia del diseño local corre la misma suerte que muchas historiografías en otras áreas del saber: la "historia oficial", la que cuenta con profusa bibliografía e investigación, -la historia que se toma como bibliografía base para la formación académica en diseño- ha sido tradicionalmente etnocéntrica, y en el caso de nuestra bibliografía específica, más precisamente eurocéntrica. La bibliografía más consultada sobre historia del Diseño Gráfico editada en español, proviene centralmente de dos autores europeos: el inglés Phillip Meggs, con su Historia del diseño gráfico ; y el español Enric Satué, con su libro El diseño gráfico. Desde los orígenes hasta nuestros días . Ambas obras tienen en común el abordaje de una historia de larga duración, y presentan un panorama pretendidamente universal de la historia del diseño, que desconoce las "microhistorias" regionales y locales.

Esta realidad se replica en la formación académica: si revisamos las currículas de las carreras de Diseño Gráfico en Argentina (tendencia que podemos inferir ocurre también en el resto de América Latina), veremos que los programas de la asignatura Historia muchas veces incluyen la historia del diseño argentino y latinoamericano de forma casi "marginal", casi como una "curiosidad" dentro del mainstream de la "historia oficial" del diseño.

En este marco, se hace necesario pensar en el desarrollo de una "historia sustentable" del diseño que recupere las "microhistorias" locales, en una historiografía de producción propia. En esta línea, aportaremos algunas herramientas conceptuales de la ciencia histórica, que pueden resultar útiles para esta construcción.
En particular convocaremos a Roger Chartier, quien desde la Historia Cultural, y centralmente en su obra "El mundo como representación" brinda elementos fundamentales para entender cómo han funcionado a lo largo de la historia las distintas formas de entender el mundo a partir de sus representaciones. Su abordaje es útil para entender cómo la construcción de los imaginarios y las autorrepresentaciones de una profesión, en nuestro caso el diseño, son marcados históricamente, por el "sistema de creencias, de valores y representaciones propios a una época o un grupo" . Este

concepto -vinculado a la noción de utillaje mental de la Escuela de los Annales y al concepto de habitus de Erwin Panofsky- permite entender los "límites de lo pensable" en cada época, las "representaciones colectivas, (. . .) los utillajes y categorías intelectuales disponibles y compartidos en una época concreta."
De esta forma Chartier señala que las identidades colectivas, en nuestro caso la de los diseñadores, se construyen a partir de procesos de representación situados históricamente y se nutren, entre otros, de los discursos de autorrepresentación de la propia historia; por lo que la recuperación de estas representaciones históricas inciden en la construcción de la propia identidad en el presente. Identidad que se ve fuertemente cruzada por lógicas que se debaten entre las visiones globales y las realidades regionales y locales en el campo del diseño.
Por ello debemos tener en cuenta que los modos de abordaje de esta historia no son "ingenuos", libres de condicionantes, sino por el contrario las categorías de análisis e investigación histórica tienen su propia historicidad, que porta una modelización a partir de la cual reconfiguran al objeto estudiado. A esta modelización deberemos sumar la perspectiva de "desde dónde" se teoriza, se investiga, se historiza.

Esta "modelización" es precisamente la que debemos cuestionar para poder lograr una perspectiva genuinamente sustentable en una historia del diseño que dé cuenta de las identidades culturales diversas que han conforman el campo del diseño a lo largo de la historia.

Es clave en este punto el concepto de luchas de representación en la historia, que Chartier define como aquellas "estrategias simbólicas que determinan posiciones y relaciones y que construyen, para cada clase, grupo o medio un ser-percibido constitutivo de su identidad." Esto es, cada grupo identitario, en nuestro caso el de los diseñadores gráficos, construye su propia autorrepresentación en relación con otros grupos, en una búsqueda por estar presentes desde la diferenciación, luchando por establecer una mirada propia, que será parte de su construcción como campo de saber y de acción. Luchas de representación que se jugarán en la disputa por un lugar en relación con otros campos en competencia y tensión, y también en relación con la centralidad y los bordes del propio campo.

La centralidad y la periferia de este campo es la que se pone de manifiesto como tensión entre las representaciones universalizantes de las "historias generales del diseño" y aquellas narrativas locales que manifiestan a menor escala realidades diversas y culturalmente relevantes.

Serán centrales entonces, en el despliegue de estrategias simbólicas que intenten respetar la sustentabilidad cultural en el diseño, dar lugar a los relatos sobre las propias historias locales, aquellas narrativas fundantes, que en tanto marcas de identidad, construyen imaginarios y autorrepresentaciones. Sabiendo que la recuperación de estas representaciones históricas inciden en la construcción de la propia identidad en el presente, y en la construcción de una propia "historia sustentable" del diseño.

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Tomamos la noción de campo que propone Roger Chartier.

ENTREFACE, UMA OUTRA ABORDAGEM AO DESIGN. OU, DE COMO SE APROPRIA O CONCEITO DE DESIGN COMO INTERFACE DE GUI BONSIEPE PARA DISCUTIR A MEDIAÇÃO PELO DESIGN A PARTIR DE VILÉM FLUSSER

Sara Velez Estêvão
Universidade Da Beira Interior, Portugal

RESUMO

Tomando como ponto de partida a concepção de design enquanto interface, nos termos em que Gui Bonsiepe o define, esta comunicação propõe-se explorar essa condição acrescentando-lhe outras dimensões ao cruzar aquele conceito com o pensamento de Vilém Flusser sobre design. Nos anos 1990, Bonsiepe publicou o livro Interface, an Approach to Design, uma colecção de ensaios em que propunha o uso do termo interface para uma "reconstrução ontológica do design" (1999). Bonsiepe pretende uma reinterpretação do design, adequada à época em que os meios digitais tomavam o seu lugar, que rompesse com o quadro de referência da Good Form. Nessa obra, tomar o design como interface pressupõe que se encara o design como algo que está entre o corpo a ferramenta e a acção estabelecendo a interacção entre estes três elementos. Tal concepção permitiria definir o domínio essencial do design que se aplicaria, não só a objectos materiais, mas também a "artefactos semióticos" como sejam aqueles que o design de comunicação produz. Como os interfaces, o design é visto como o que estabelece o diálogo entre diferentes elementos

que se encontram separados, mediando a sua relação. Porém, tal como a própria palavra indica, um interface é simultaneamente algo que se interpõe entre aqueles mesmos elementos que pretende ligar. Assim, encarar o design como interface implica, na nossa perspectiva, estudar esta característica ontológica que está presente em todas as mediações e raramente é analisada. A complexidade dos objectos de design contemporâneos, a sua constante transfiguração entre objectos materiais e imateriais que medeiam a relação entre o homem e o mundo em que está inserido, tornam também mais complexa a sua mediação. Por outro lado, os sistemas tecnológicos alargaram o domínio da acção do design. É em grande medida nesta dimensão do design, que se interpõe entre os diferentes elementos, que se situam os problemas do design. Impõe-se, portanto como um imperativo ético, discutir a dualidade do design enquanto interface. Vilém Flusser encara aquela ambiguidade como uma condição humana. O design é visto pelo autor como uma criação que se propõe ultrapassar os problemas e limitações humanas e estabelecer relações entre pessoas. Porém, os objectos de design tornam-se eles próprios obstáculos que por sua vez criam outros problemas que necessitam de ser ultrapassados. Flusser considera necessário encarar esta perspectiva para que se torne possível abordar a criação de objectos de design enfatizando a relação de diálogo que podem promover por oposição à atenção exclusiva aos próprios objectos. Não lhe chamando interface, Flusser colocava já o design numa posição comum com a que Bonsiepe viria a defender (os seus textos são anteriores aos ensaios de Bonsiepe), não obstante a sua atenção à dimensão de obstáculo que este pode assumir. A comunicação a que nos propomos, procurará caracterizar o design enquanto interface seguindo Bonsiepe, completando-a com os contributos que Flusser acrescenta a esta concepção, comparando e interpretando conceitos. Mais especificamente, demonstrar-se-á a importância e validade para os estudos de design da análise da sua dimensão ontológica enquanto obstáculo.

PALAVRAS-CHAVE
Vilém Flusser; Gui Bonsiepe; Teoria do Design; Mediação; Interface

THE FISH ROTS FROM THE HEAD DOWN

Paschalis Paschalis
Universidade de Nicosia. Chipre

ABSTRACT

The phrase, "The fish rots from the head down," is used to express the idea that all of the problems in a company can be traced back to its leadership. It's a phrase that is often used in Cyprus to describe governance failures in politics and one I find suitable in describing leadership mishaps in the multimedia project management process.
The project manager and leader of a multimedia team, is usually the one and only reference point for his company, his team and the client. During every milestone in the life cycle of a multimedia project, the project manager has a decisive role which can dramatically affect the smooth operation of the process and the outcome of the project.
Although arguably a project manager cannot be successful without having broad knowledge and vast experience in the field, it is his personal qualities that will differentiate him from the competition, as those can have a significant effect, not only on the outcome of every project, but they will also be the decisive factor of whether he and his team can enjoy success over a longer period of time. As being a successful manager requires that you are valued, respected and appreciated not only by the client, but also by your company's administration and most importantly by your own team members. If your team members are unhappy, they are not treated with respect and feel unappreciated, even if initial success comes, it will most likely not last.
The presentation, through empirical references, will examine how the phrase "the fish rots from the head down," applies to a number of situations involving the project manager of a creative multidisciplinary team, focusing on his personal relationships with the team

members and the client. It will investigate through pragmatic examples how most failures can be traced back to the personal qualities of a project manager, and demonstrate that they can be equal to or even more important than his actual professional skills and hands-on experience.

The phrase, "The fish rots from the head down," is used to express the idea that all of the problems in a company can be traced back to its leadership. It's a phrase that is often used in Cyprus to describe leadership failures in politics, the governmental sector or any other kind of group, and one I find suitable in describing leadership mishaps in the multimedia project management process.
The project manager and leader of a multi-media or a multi-disciplinary team is usually the one and only reference point for his company, his team and the client or individual who has the authority to control time and budget and has the right to sanction design decisions.

During every milestone in the life cycle of a multimedia project, the project manager has a decisive role, which can dramatically affect the smooth operation of the process as well as the outcome of the project. The most obvious qualities a project leader has to possess in order to be able to cope with the high demands of the job and ultimately to be successful, is broad knowledge and vast experience.

It goes without saying that a manager without an excellent knowledge and understanding of the various multimedia elements and the diverse services a multimedia company can offer to its clients, does not stand many chances in being successful, as the field is very demanding and extremely competitive. The same goes for experience. Multimedia management is much more like managing innovation. Even if standard tools are used, the process and the end product are constructed according to unique circumstances, and in order for a leader to have the ability to manage innovation, vast experience in many different domains, scenarios and situations is of utmost importance.
Although arguably a project manager cannot be successful without having knowledge and experience in the field, it is his personal qualities that will differentiate him from the competition, as those can have a significant effect, not only on the outcome of every project, but they will also be the decisive factor of whether he and his team can enjoy success over a longer period of time. As being a successful manager requires that you are valued, respected and appreciated not only by the client, but also by your company's administration and most importantly by your own team members. In the end, it all comes down to the team members, as they will be the ones designing and producing the projects. If these individuals are unhappy, they are not treated with respect and feel unappreciated, even if initial success comes, it will most likely not last.

The control of a creative, skilled group is not easy. A leader of a multidiscipline, professional team made up of individual specialists, faces people used to making and taking decisions for themselves within their own specialism. At any given time during the development of a multimedia project, all of the members of the group will have a relevant perspective on the way a project should be structured and treated. This is a potential strength but also a potential weakness of the group. This is when a project manager needs to know which is the right decision to be made, but most importantly, he needs to take care in the way he communicates his decisions to the team. The last thing a project manager should want to do is to make his team feel ignored, unappreciated and manipulated.

For example, as a project manager, in some occasions you will have to impose a general design solution on your team and in some other occasions, when the budget allows it, involve them in the creative decisions. No matter the occasion, your team will always have plenty of ideas on what will work more effectively. They have freedom of thought in relation to the top quality that they could attain, while they are not subject to the constraints of time and cost in their thinking.As their leader, you always need to make clear the reasons behind your decisions, and focus your team on tailoring their suggestions to improvements, consistent with the time and cost that will serve the project best. On the other hand, if you don't ever allow them to shape the project in some way, you run the risk of missing out on genuine improvements, and most notably, losing the team's motivation, trust and respect.

Most multimedia projects take place in a team culture. A good team culture can be defined by how everyone is pulling together to achieve well-defined tasks, has respect for each other's skills, shares success and failures and has mutual support when needed. The manager has a dual role: to provide the conditions that will help to motivate the team to work well together, and to create an open, constructive working atmosphere to allow the individuals to achieve their best in a way that also serves the project best. Arguably, it is not easy to create an open, constructive working atmosphere as individuals have their own aspirations, their own personality traits, their own strengths and weaknesses, their own defense mechanisms, and their own ways of interacting with other people. At first, it might seem impossible to unify a group who come from different disciplines, with different skills and different ways of describing

multimedia. However, the team will respond to the tone and form of interaction you set. You can be the catalyst by being open and informative, supportive and straight talking.

The main differences between traditional managers and managers of creative teams seem to relate to the dynamics of interaction with team members. For successful creative team managers, the old authoritarian role of manager appears to be changing to more of a collaborative role. The manager also retains more of a 'hands-on' approach to the task in hand, whereas previous models have stressed leaving one's specialism behind, trading it for new management and administrative functions.

Leadership style, team and client management and credibility are only a few of the personal qualities a project manager must possess. These qualities can have a significant effect on the level of authority and level of control over resources and budget. The first time I came to the realization that the personal qualities of a manager can have a significant effect on the psychology, productivity and job satisfaction of everyone involved, was a few years back when I was running a small graphic design studio. I had received a call from a personal assistant of a manager of a large retail store who required our services. It appeared that we were recommended by a client of ours and his personal assistant was calling to make an appointment. What struck me from the initial conversation that we had was that she was surprisingly rude.

I ignored it and booked the appointment. Later on that week I visited the store to meet with the manager. I arrived at the store a bit early to have a look around and get an idea of the organization prior to the meeting. To my big surprise the retail personnel also seemed to be quite rude and anything but helpful. When I finally met the manager everything made sense. He was the rudest of them all!

After this incident I started noticing the same pattern everywhere. Whether it was a retail store, a graphic or web design studio or an administrative office of a company or a university, the behavior of the team members or employees was reflecting the behavior of the manager. And although negative actions and emotions can have a prominent effect on the psychology and productivity of all employees regardless of their occupation; in creative professions where you expect individuals to bring out their best selves, be inventive and imaginative, negative emotions coming from the leadership can only have devastating effects.

The presentation, through theoretical but mostly empirical references, will examine

how the phrase "the fish rots from the head down," applies to a number of situations involving the project manager of a creative multidisciplinary team, focusing on his personal relationships with the team members and the client. It will also investigate through pragmatic examples how most failures can be traced back to the personal qualities of a project manager, and demonstrate that they can be equal to or even more important than his actual professional skills and hands-on experience. The presentation will also look at ways that a leader can make the job more satisfying and rewarding for anyone involved.

BIOGRAPHY

Associate Professor at the Department of Design and Multimedia, University of Nicosia. He has presented and published papers in journals and international conferences on visual communication, user interface design and multimedia. He has worked on projects funded by the European Union, UNOPS and the Research Promotion Foundation of Cyprus. He has served as a member in various academic and reviewing committees and has been appointed by the Hellenic Quality Assurance & Accreditation Agency as a member of the team for the external evaluation of Greek Universities. He also practices project management, art direction, graphic/packaging and user interface design professionally and has more than 20 years of experience in the field. He has been teaching in tertiary education since 1998 and he is the founder and creator of the BA program in multimedia. He currently holds the position of head of the Department of Design and Multimedia.

AESTHETICS AND EROTICS OF DESIGNED THINGS

Keith Russell
Design Communication & IT - The University of Newcastle. Australia

ABSTRACT

In our everyday dealings the sensory qualities of things are mostly muted. We want door handles to function as levers that open doors; we want windows to be seen through and permit light; we ask that conversations convey reciprocal meanings. But door handles also afford sensations; windows also provide vistas; and conversations allow for exchanges of affects. Material things (door handles), experiential things (looking through windows) and psychological things (conversations) all offer potential aesthetic moments: moments in which the sensory qualities are available as part of the larger meanings evident in our dealings with things. Accepting the primitive and primary aesthetic possibilities of our relations with things, we still mostly relate to things in an-erotic ways. When we shake hands with someone, we touch and we are touched, but this exchange is often perfunctory; it is often a denial of the erotic and aesthetic (we touched but we did not touch each other). We recognize that the hand of the other is warm or cold, soft or rough. But, mostly we push this aesthetic and erotic information away. Designers need to embrace the aesthetic, erotic and affect possibilities of the things they design if they are to get passed simple functionality as the key quality of good design.

KEYWORDS

Affects, Aesthetics, Affordance, Erotics

AESTHETICS AND EROTICS OF DESIGNED THINGS

If only things did what we want things to do. That is, if only the functions we expect of things and the functioning of things matched. The mismatch of our expectations can lead to irritation, frustration and even aggravation. Take the everyday event of opening a door: not being able to open a door on our first try is irritating; not being able to open it on our second try is frustrating; not being able to open it on our third try is aggravating. From this point, things can only get worse: being seen by someone else as we struggle with attempting to open a door (in a public place, for example) is even, potentially, humiliating. This range of emotions is hardly what the designer of the door anticipated. Just what emotions did the door designer predict, if any?

In his study of the displeasures that users typically experience when things don't go as expected, Patrick W. Jordan reports that: "annoyance/irritation was the emotion chiefly associated with displeasurable products" (1966, p. 70). Other negative emotions reported by Jordan include, in order of frequency: anxiety/insecurity; contempt ("towards the product"); frustration; resignation; aggression; and, feeling cheated. The kinds of objects that led to these emotions include such mundane things as: an alarm clock with a harsh buzz; an electric cooker that took a long time to warm up; a difficult-to-use car stereo; and, a faulty kettle.

Donald Norman outlines similar human-object confrontations in his many explorations into the designed affordances of things (what things are for). While his accounts have often been taken to imply that things should simply describe their functions in their immediate qualities, such that door handles should obviously be for turning, Norman has gone to some trouble to elaborate just what he means. According to Norman: the concept of "affordance" has captured the imagination of designers. The term was originally invented by the perceptual psychologist J. J. Gibson to refer to a relationship: the actions possible by a specific agent on a specific environment. To Gibson, affordances did not have to be perceivable or even knowable - they simply existed. When I introduced the term into design in 1988 I was referring to perceivable affordances. Since then, the term has been widely used and misused. (2007a)

Perceivable affordances then amount to some kind of sign. That is, they don't simply exist; they exist within a relationship of meaning; they are not just knowable; they are open to being perceived as indications of function; they can be read as signs can be read. For Norman, such readable signs, in order to indicate affordances, should mean what they say: People need some way of understanding the product or service, some

sign of what it is for, what is happening, and what the alternative actions are. People search for clues, for any sign that might help them cope and understand. It is the sign that is importance, anything that might signify meaningful information. Designers need to provide these clues. Forget affordances: what people need, and what design must provide, are signifiers. Because most actions we do are social, the most important class of these are social signifiers. (2007a)

Which seems to suggest that the aesthetic and experiential qualities of objects have been subsumed within the abstract powers of signs, symbols and social interactions. The smoothness of a door handle's surface may be there to indicate that it is to be taken in the hand; but, that is all that the smoothness is affording by way of being a sign of the designer-intended function of the handle. By attending to the affordances of designed objects in this constrained way, Norman has established what might best be described as an an-erotics of things. The sensory features are there but they are not key to the affordances. In place of the immediate reality of discernible moments of sensory connection, what users do, it seems, is search for clues that designers have located somewhere in the object.

Eros, as the god of desire can be seen as the god of sexual desire rather than more fully as the god of generation and genesis. In the broadest sense, erotics is being used here as the field of study that takes account of things that promote life. We can think of Freud's primary drives, Eros and Thanatos (life and death) as the limiting features of such a field of study. Including death in our survey of life is more than logical, it is an indication of the proper scope of erotics. Knowing that we die (mortality) is often seen by philosophers as a marker of our humanity; knowing that new life is an ever-present possibility (natality, as developed by Hannah Arendt) is less commonly employed. By avoiding both life and death, the general design accounts of affordance are significantly diminished, especially since these accounts often offer up actual insights into a possible erotics of designed things while avoiding the implications that these insights have for design.
While an immediately experienced affordance, as in an account that Gibson might make, could be seen to point to a phenomenological exploration of human-object relations (there is a self such that the self is in a relationship with an object other than the self), the perceived affordances in Norman's account, point to a readable and semantic relationship; one that is best understood as a meeting of minds (the designer and the user) through an object. This meeting, of minds, is definitely not a meeting of bodies even though, as with a Rodin sculpture, I may place my thumb where a designer molded a thumb place, perhaps by using their own thumb.

Norman's model of affordance sounds rather drab and ordinary: I take ahold of the door handle and it affords my turning by its semantic indications that the handle is for turning. What designers would rest happy with such a mundane response to their designed objects? Korean engineers, experimenting with customer satisfactions and affects when opening and closing the tail gates of sport-utility vehicles, reported that: In the force graphs of closing tail gates, the smaller the initial closing force, the better the customers' affect, and the initial force should be smaller as the initial close angle is larger. In addition, if there is a force in the middle of the closing more than the initial force, customers' affect was worse. Last, the longer the steady state of closing force, the worse the customers' affect. (Ryu, Jin, Hwan Yun, and Kim, 2013, pp. 183-4)

The stated aim of this research was to get beyond just the visual design aspects and the immediate sensory aspects of touch and feel; they were experimenting with the affects of people when opening and closing tail gates (p. 180). While attempting to promote affects by varying the forces involved with closing tail gates, the Korean researchers seem to be offering a mostly engineering account of the actual experiences of those closing tail gates. The reporting of their results is scientific; their technical descriptions are un-emotive. The actual results of the experiment would seem to fall easily within Norman's account of mundane perceivable affordances except that there is an excess of sensory satisfaction. More is going on here than a simple transfer of meaning; the users were more satisfied when the door seemed to facilitate the operation ("smaller initial closing force") than when the door resisted more; and, things got worse when "in the middle of closing" there was an increase in the force required to close the tail gate.

What is going on here? The conversations between things and their users would seem to be more complex than is suggested by a simple semantic investigation. The following account of a successful door handle maker, from Germany, is instructive. The interview was conducted by W. O. Geberzahn; the interviewee is Jürgen W. Braun: One day we were sitting in Johannes Potente's old studio -- it must have been June 1985 -- and Aicher asked: "What makes the products of Johannes Potente different from other door handles?"

We all looked at one another. Somebody said: "They feel good in the hand." We started to describe what "feeling good in the hand" might be. I said something like, "the thumb finds its stop, the index finger its indentation, the roundness, the volume . . ." and after quarter of an hour we had defined the four laws of grip. Otl Aicher wrote them down immediately: 1. thumb stop, 2. index finger indentation, 3. roundness, 4.

grip volume - and did a drawing to go with them. That led to a poster. Although here in the company, people were initially embarrassed. (2001)

The embarrassment on the part of the designers is an indication that more is going on in this description of designing door handles than a simple account of affordances. The "thumb finds its stop, the index finger its indentation", these are aspects of reciprocal touching not designed objects merely affording sensory feed-back that indicates a successful use that was inscribed on the object (rather than embedded in the subject-object experience) by the designers. A similar kind of excess can be found in an account given by Norman of his taking a shower in "a strange hotel room in a strange city": I was traveling, and once again I woke up to a strange hotel room in a strange city: Delft, The Netherlands . . . I went to take a shower to prepare myself for my 8:30 AM pickup. As I looked over the bathtub and shower, wondering where to put the soap, I realized that the design was talking to me. "Put the soap here," the metal dish on the side practically screamed at me. "Grab here," said the handle at the far side of the tub. I looked up at the showerhead fastened to the wall, then down along the tub to a strange hook-shaped device just above the tub. "What is that for?" I wondered, as my eyes searched for something relevant. I looked back at the shower head, and realized it was fastened to the wall with the same hook-like device, with a flexible tubing leading back to the faucet. I lifted the showerhead off its upper location and put it down below. Yes, it fit perfectly. "No," I said to no one in particular, "I like my shower above my head." I took one glance at the towel rack at the side, lined with towels, all appealing to me: "take me," each appeared to say. And as I prepared to take my shower, I looked back at the soap dish, which was still imploring "put the soap here," and firmly announced "no, I like my soap at the back end of the tub," and I put my newly unwrapped bar there, on the ledge so conveniently provided. (Norman, 2007b)

Naked, one presumes, before the objects of his attention, Norman is drawn into the experiential sensorium that includes wetness, slipperiness, promise of pleasure, texture etc. In this aesthetically rich environment, to say that the towels spoke implor-ingly "take me" is hardly the type of speaking of a normal perceived affordance of a thing; this is beyond semantics. Norman's bathroom story is a kind of pre-reflective yarning (for more on yarning as a research method, see Bessarab and Ng'andu, 2010); almost a phenomenological tale told in the manner of Gaston Bachelard when talking of wardrobes in The Poetics of Space: With the theme of drawers, chests, locks and wardrobes, we shall resume contact with the unfathomable store of daydreams of intimacy. Wardrobes with their shelves, desks with their drawers, and chest with their

false bottoms are veritable organs of the secret psychological life. Indeed, without these "objects" and a few others in equally high favor, our intimate life would lack a model of intimacy. They are hybrid objects, subject objects. Like us, through us and for us, they have a quality of intimacy. (1994, p.78

Norman's towels, like all hotel towels, may well be there simply for the taking; but, suggesting the towels appear to say "take me" is an extension of the usual subject-object discourse. These towels are like Bachelard's "hybrid objects, subject objects". In their conversing, Norman's towels "have a quality of intimacy". For Norman, even the towel rails speak as they offer up the towels. This bathroom conversation can only be described as erotic. Except that, for Norman, these conversations are an-erotic. Having reached a point of major disinhibition, Norman is open, like the door handle designers, to embarrassment. His engagement has gone beyond the everyday in its excesses. So, how does he recover himself from this magic extravagance? He breaks the spell by informing us that he was on his own, and, while he did speak some of this aloud, he wasn't talking with things, rather he was, in his understanding, conversing with the designers of thing:

"Here are your towels," said the horizontal bars at the rear wall, at the end of the tub, conveniently stocked with towels. "Thank you, yes, and no, not for the soap," I was replying. I even spoke some of these comments aloud. To whom was I speaking? An observer would have thought me deranged, for there was no one in the room. Fortunately, I usually shower without an observer, but I was having a conversation with the designers, considering their suggestions, accepting some and rejecting others. The designers may not have been there to listen, but their statements clearly required an answer. (Norman, 2007b)

Now things have become reflective, literally. Norman, in reflecting on his bathroom experience, subsumes the erotic aspects. He distances himself from the immediacy of his experience and engagement by appropriating the meaning of the conversation. Rather than staying in the erotic world of the subject-object, Norman shifts into the rational and logical world of the designer-user. In the rational world, meanings become available and dominate; in the erotic world, embodied experiences are dominant. Somewhere, in a relationship with these two worlds we can locate the an-erotic. That is, in each of the accounts of subject-object experiences we have looked at, there have been erotic moments or implications; moments in which there is an excess of sensory engagement; moments when the semantic aspects are less significant.

At one extreme we have the Bachelard example that happily spills over in to affects (intimacy) in the subject-object relationship. Then we have Norman's slippery tale in which the erotic is brought to the fore only to be subsumed. Next we have the door handle taxonomy that seems to be offering semantic details to account for what is, after all, touching and being touched. And last, at the further extreme, we have the tail gate closing example that illustrates in an an-erotic way, the kind of embodiment that borders on the erotic but yet stays within the world of affordances and the semantic.

If we were to explore the tail gate example, as a kind of dance, between the user and the tail gate, then we could open up the erotic possibilities; but, that is not really where the experiment was aiming for. Rather than looking for a complex phenomenological engagement, the researchers were seeking to determine mere pleasure or satisfaction. The satisfaction aimed for, would seem to be equivalent to that determined by Norman in his account of his bathroom conversation with the intentions of the designers. By shifting the focus to the intentions of designers, made evident semantically in their designed objects, the erotic aspects are diminished or controlled and made an-erotic. The sensory aspects are there; the possibilities of the erotic are there; the glow of the erotic is appealing (like Norman's towels); but, the an-erotic wins. Rather than promoting the user's own engagement with objects, this affordance strategy approaches the object and then converses with the object's designer. This an-erotic way allows for doors to be efficiently opened. But, what has been left to one side in this method of designing?

There is a long history to the divisions between a rational dimension and an erotic dimension. For example, Jung contrasts the masculine principle of Logos with the feminine principle of Eros.

Consider: Logos implies active, assertive, intellectual, penetrative, objective interest; Eros implies passive, submissive, emotional, receptive, psychic relatedness. But there are many other ways of denoting this basic dichotomy, and none of these involve questions of gender at all: Apollonian-Dionysian, Classical-Romantic, secondary and primary process, digital and analogic thinking. (Samuels, 1985, p. 171)

Returning to Norman's bathroom scene, we can clearly see the shift from passivity (Eros) to activity (Logos) as the conversation shifts from subject-object to user-designer. The user may well be relatively passive when conversing imaginatively with the designer, but in the pre-reflective engagement with the object, they are submissive and hence erotically passive; in the engagement with the designer, they are on an

equal footing: the user challenges the designer to make obvious the rationality of the design in its objectively perceivable affordances.

One way of accounting for the mixture of the sensory and the logical, in the various accounts given above, is to call on an operational concept of the aesthetic as a way of distinguishing the erotic (subjective) from the logical (objective). Looking at a variety of Japanese aesthetics, Koren proposes that the aesthetic can be seen to refer to: a set of informing values and principles – guidelines – for making artistic discrimination and decisions. The hallmarks of an "aesthetic" are (1) distinctiveness (distinction from the mass of ordinary, chaotic non-differentiated perceptions), (2) clarity (the aesthetic point has to be defined – clear – even if the aesthetic is about unclearness), and (3) repetition (continuity). (1994, p. 75)

In contrasting the erotic with the aesthetic we are obviously talking about a continuum. One could equally offer a totalizing model of an aesthetic dimension that would include both extremes. The purpose here in teasing out the contrast between Eros and Logos is to allow us to observe how the primary design discourse about subject-object relations is dominated by a tendency to an-erotic yarnings. And the discourse is also mostly structured by the terms and concerns of Logos.

The urge for designers to be pragmatic is obviously temperamental as well as financial: designers make things; they engage with real materials in real time to serve real needs of real communities. Hence, there is an urgency about formalizing the design process. Aesthetics, as a function of Logos, fits neatly into the designer's kit of tools. Knowing more about the Eros aspects of experience could be seen to be a vagrant and peripheral kind of knowing; it is sort of embarrassing and chaotic and libidinously charged. The urge for designers is to bend towards Logos and attempt to take control.

As our relationship with an object becomes more formalized, so it becomes more objective, so it becomes more active, on our part. For our relationship to be described as an aesthetic one, we must be able to point to something distinctive about the discriminations we are making. Becoming aware that we experience more or less pleasure when opening tail gates with different kinds of resistance is not, one presumes, for the average user, a moment of aesthetic discrimination. That is, the tail gate designers are the ones who have made discriminations, based on their experiments; they have used "informing values and principles"; hence their final tail gate design could be seen to be an aesthetic design by other designers. Making these discriminations available to the end user as would seem to be, if not an impossible task, then

at least a more difficult task. That is, for the user the experience may well remain that of an an-erotic engagement: they have experienced an affect of pleasure/satisfaction but they are not fully aware of how this is working; the formal structure of the experience is beyond their immediate knowing. For the users, there is a potential lack of clarity. Equally, there is a potential absence of continuity, not in terms of repetition (the user can experience the vague pleasure over and over, like Homer Simpson), but in terms of the difficulty in aligning the qualities of the tail gate experience with any other experiential part of the sport-utility system. The user would need reinforcing experiences such that the passenger doors might function in a similar way to produce a similar satisfaction but since they open differently this would be difficult to achieve.

In the case of Norman's bathroom, we could expect to find, in a well-designed hotel room, evidence of all three aspects. There are obvious "informing value and principles" in the way that a well-designed bathroom is put together as a system. Even the towels should reflect these values. As one looks around a well-designed bathroom, the sense of order and coherence should become clearer. The designer's touch should be open to apprehension or else we wonder why we have paid five star prices. This clarity of purpose is then made evident in the continuity of a design sense that is not only open to observation in the bathroom but also in the location of the bathroom and then the other features of the hotel suite. All of these features, of the aesthetic, are indications of a designer. That is, these desired qualities reinforce the distance between the object and the user. Indeed, we find ourselves positioned as users in relation to aesthetically designed objects just as we find ourselves positioned as viewers when we stand in front of an aesthetically constructed painting. Because we get to use designed objects, the erotic aspects persist. But, in our use of objects, we are encouraged to take an an-erotic approach. We use the soap but we still smell its perfume. And then, we attribute the perfume to our bodies as a sematic marker, not to indicate that we have had an erotic moment with the soap (which we might have had), but rather the perfume on our bodies is intended to be semantically read by others and ourselves as a code that indicates we are clean. In this shift to the semantic we have made the erotic an-erotic.

The aesthetic aspect of designed things, as a divergence from the erotic, can be more obviously indicated in the case of objects that place symbolic value above intended use in their presentation. Looking at many of the objects from the design firm of ALLESSI we can appreciate how this kind of aesthetic and semantic approach elevates designed objects to a fine art. In talking about the Juci Salif lemon squeezer, Stark points out: Sometimes you must choose why you design - in this case not to squeeze

lemons, even though as a lemon squeezer it works. Sometimes you need some more humble service: on a certain night, the young couple, just married, invites the parents of the groom to dinner, and the groom and his father go to watch football on the TV. And for the first time the mother of the groom and the young bride are in the kitchen and there is a sort of malaise - this squeezer is made to start the conversation. (Starck, 1998, URL)

Yes, the lemon squeezer can be used to squeeze lemons but not successfully: the lemon juice will corrode the metal. What Stark is saying is that the object has been designed to subvert its obvious affordance uses in order to better announce its deeper semantic and aesthetic uses. The designed object needs to be trans-valued. Just as a painting of a chair is a trans-valuation of a possible real chair, so Stark's design is a trans-valuation of a lemon squeezer. Where have the erotic possibilities of the object gone? In a sense the erotic has been symbolized by the absence of immediate function or use. In this way the questionable utility of the object is a correlative for the "malaise". Just how is the mother-in-law and daughter-in-law relationship going to work? Just as with an art work, as defined by Koren, their relationship needs to be based on "a set of informing values and principles" that allow for "discrimination and decisions"; their relationship needs to be distinctive; it needs to be clear; and, it needs to have continuity.

The Juci Salif is at the semantic extreme of aesthetically designed objects. Its use is taken over almost completely by the world of Logos and the aesthetic. But, Eros and the erotic still persist even in the case of the Juci Salif. Indeed, one of the attractions in this object is its deliberate tension between the aesthetic and the erotic that is sustained at the levels of form and function. In this sense, certain designed objects can deliberately include both aspects with little difficulty. As with bathrooms, kitchens are already available for the Bachelard phenomenological treatment so that objects that find their home in kitchens are ideal cases for such complex accounts of user experiences.

While notions of design and emotions (see Desmet and Hekkert, 2007) and design and affects (see Demirbilek and Sener, 2003) have become part of the times, very little attention is being paid to the erotic aspects of our subject-object experiences. We still live in a world dominated by the logical, the functional and, in the case of designed objects, the aesthetic. Which means that the dominant mode of design, when talked about by designers, is that of the an-erotic. And yet, everything we experience, more or less, involves our senses. Being able to locate designs on an aesthetic-erotic continuum allows us to start to get beyond the engineering pleasantries of the an-erotic; it allows us to explore the possibilities of the transcendent aesthetic (perhaps Papanek's concept of spiritual architecture (1995, p. 49)) and the abject erotic (perhaps Kristeva's category of corpses (1985, p. 71)); it allows us to make known, within the structures of design, more of what we already know in our subject-object experiences. By expanding the discourse of our knowledge of our subject-object experiences so we expand our account of our being human in a world of things. All of these things are worthy tasks for design.

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EDUCATION

ENSINO

EDUCATION ON DESIGN FOR SUSTAINABILITY: FOCUS VS. FRAGMENTATION

Carlos Fiorentino
University of Alberta, Canada

ABSTRACT

The inclusion of sustainability as a matter of study in design education is increasing at an accelerating rate, however sustainability is still an aggregate subject, subordinated to traditional subjects of design, disperse and fragmented as a concept, and inconsistent as a prospective plan for preparing future designers with sustainability literacy in mind.
In current design education sustainability is taken like any other design problem to solve, like an individual assignment or as a project still part of a traditional design subject. While these traditional subjects are a necessary part of the training, the projects without an appropriate context and literacy can miss the point when the goal to achieve is sustainability. As a result, sustainability is taught in a fragmented way, disconnected from core issues such as understanding ecosystems and natural patterns. Courses and projects are executed in silos, with no connection to other disciplines or fields outside design, and the consequences seen are superficial and irrelevant projects, opposed to innovation and relevancy demanded by sustainability.
Teaching sustainability in design programs demands a holistic approach to design subjects and an appropriate space to integrate all the necessary concepts and tools required for sustainability. It requires a focused plan.
This paper discusses the advantages of teaching sustainability as a focused course or a focused program versus the current fragmentation of the subject observed in design schools. The exploration and conceptual framework is based on personal experiences teaching the

subject at the University of Alberta, and based on current research and collaborations done with colleagues from other design schools in Canada and around the world.

KEYWORDS
Design For Sustainability, Design Education, Curriculum Development

CONTEXTUAL FRAMEWORK: THE IMPORTANCE OF FOCUSING ON DESIGN FOR SUSTAINABILITY

In these days, it is common to find sustainability installed as a subject of study in design education. Employers looking for junior designers and design students (future design practitioners) seeking for future employment are aware about the need of sustainability literacy as an asset. This trend continues and the demand has increased substantially in the past few years as a career factor driven by students' and industry's needs alike. The inclusion of sustainability literacy in design education has been a subject of study and research for many scholars, master and doctoral students involved in design curriculum development, social oriented design and participatory design (Boehnert, 2010, p.143).

In my early years working on the subject of Design for Sustainability for my Masters degree at the University of Alberta I developed a series of pilot classes for undergraduate design students in the middle years of the program, as part of my conducted research. Students participating in the study offered significant input on the matter of including focused DfS education in current design programs (Fiorentino, 2008, p.79). Here is a selection of comments:

" Sustainability issues are new [to students] but imperative… as designers we [will] have a huge responsibility to contribute to a sustainable future"

"A DfS focused course has the capacity to extend sustainability issues from theory to practice. Sustainability should be extended from discussion to practice and a way to do this is teach it in the classroom."

"We have all heard about sustainability yet we know very little about its depth and interdisciplinary needs."

"To have a class [DfS] that solely focuses on I think would get people starting to think about smaller steps and coming together in efforts to stop and repair some of what we have done to the environment sustainability [the results of sustainable design]"

Despite of the increase of awareness demonstrated by design students and educators alike, sustainability is still an aggregate subject, subordinated to traditional design subjects of study, another problem taken like any other design problem to solve. The way sustainability has been understood and approached at design schools and design industry alike ignores the fact that sustainability is a wicked problem. Wicked problems are basically ill-formulated problems. They are different to traditional problems, because traditional processes can't resolve them (Rittel & Webber, 1973). A wicked problem ignored as such or wrongly approached leads designers to more severe, diverse and irreversible problems.

Unsustainability, as any wicked problem and unlike conventional design frameworks, has multiple causes, and boundaries and implications are hard to define. It cannot be addressed just by looking for right or wrong answers, but rather by formulating the right questions. It cannot be addressed by isolated actions but by a deep and critical reading of the systems that are causing the problems in first place.

In 2008 I presented my masters thesis on developing a Design for Sustainability focused curriculum. It took more than four years and a lot of personal dedication to introduce the idea of a first pilot class on Design for Sustainability for first year students of design in the appropriate department –Department of Art & Design at the University of Alberta, and this is still a pilot experiment planned for 2013 that will demand a lot of extra work and willingness from educators involved.

Still, adapting the current teaching capacity and staff in-house to teach the subject as if they teach any other subject of design will be a challenge. A new set of skills, literacy and experience on the matter along with the necessary interest and conviction are basic requirements. Credentials and teaching skills may work alone for other areas of design, however the quality and effectiveness of teaching sustainability only based on traditional design teaching skills may turn into quite poor Design for Sustainability results. Students perceive the lack of focus on DfS in their programs. Many of the students I've had in past DfS classes manifested that if they do not see a strong plan of studies specifically oriented to sustainability, the subject will not be taken as seriously as it should be.

In addition to traditional design values and objectives it is imperative to also include values and objectives concerning to the subject of sustainability in design programs. Sustainability cannot be approached by design from a single bottom line, but from three different ones: the economic, social and environmental sides1. It is very difficult for design educators to adapt or change programs' content to create room for courses like DfS, when consumer-based design industry and traditional design careers are the main driving forces to create content in the curriculum.

These and other limitations have forced educators to find alternative ways to teach the subject of DfS. Perhaps the most popular solution is to include sustainability in small and suitable doses into the regular curriculum. In many cases educators believe these alternatives are big improvements or final solutions to the problem of including sustainability as content, which is far from the truth.

Particularly in North America, design schools trying to include the subject of sustainability in plans of studies are still dealing with the limitations and the reluctance to change from the higher education systems in place. In contrast to a context of open minded approach required for sustainability literacy, universities are still trapped in a 20th century education format, following industrialism and utilitarianism premises, based on one bottom line ruling the decision making: budget, and one way of measuring success: growth.

Many universities in Canada have launched in the past few years brand new offices and divisions focused on sustainability. These offices follow the mandate from university governments to address sustainability at a macro scale, covering from outreach actions to the community to campus events and campaigns. At the University of Alberta, while these initiatives are noticeable and accountable, the influence in terms of academic integration and quality of teaching on the subject of sustainability has very little or no influence at all, and this is in tune with the notion of sustainability as an "aggregated" subject to the system rather than a systemic approach to sustainability.

For Deans, Chairs and program administrators it may be easier, faster, more economic and efficient for the short term to adapt current teaching spots into courses with updated subjects, rather than creating new courses, new syllabi or an entire new curriculum for including sustainability as a matter of study. As an example of how hard including a focused course like this can be, the most focused undergraduate course on Design for Sustainability taught at the University of Alberta (HECOL 493) is not hosted by the Design program but under the Human Ecology program. Design

students from industrial design or visual communication design willing to take this course need special permission from two different departments to do so. To make things more confusing for students and educators alike, this course can only be found in the university's calendar as "Selected topics in Textile and Clothing", DfS still needs to be justified within another subject, and can be only offered in spring or summer short courses. Surprisingly or not, many courses like this have been "camouflaged" under history, arts, or engineering classes in many programs at the University of Alberta. The relevance of teaching the subject of Design for Sustainability is too big and complex for such small spaces in the curriculum.

Teaching the subject only in fragments or addressing single issues works against one basic principle of sustainability, which is having a holistic approach to design problems. Sustainability is not about single issues to address. Chick and Micklethwaite in their book "Design for Sustainable Change" define the idea:

The term sustainability encapsulates a complex set of ideas… Sustainability is therefore difficult to put in a nutshell. As a result, it can be difficult to know how to act in response… Sustainability is reduced sometimes to single issues, easy-to-grasp principles or actions that make us feel that we are doing something useful and constructive (Chick & Micklethwaite, 2011, p.91).

FRAGMENTATION IN THE CURRICULUM

Design has naturally evolved into an interdisciplinary, cross-disciplinary and multidisciplinary field, and in a broader sense, designers might be trained to be open, flexible, adaptable and pragmatic professionals, and take advantage of this qualitative position. New paradigms of design demand this approach, however the traditional approach to design has found limitations to embrace this idea in philosophical and practical terms. The sociologist Bruno Latour refers to this when he explains the "matters of concern" of design, by which he means topics that cross disciplinary boundaries. He argued that design, as a discipline, has failed in devising the tools to address the "matters of concern" of design or its many-sided issues (Latour 2008, p.13). This is perhaps due to the division and isolation of areas of concern "for drawing things together" observed in traditional, hierarchical and linear approach to design education, and implies a change of direction for a next evolutionary step.

Design curriculum should be considered able to adapt any course content to include sustainability as a "matter of concern". This is an advantage but can be also a trap. In the two Universities I teach design, sustainability is given in form of a one class lecture, a project, a unit theme, or an individual assignment, all these formats disconnected and fragmented in the course outlines. In fact, many of these are the most common formats I have observed in many design schools around the world.

The inclusion of sustainability as a subject of study usually depends on individual choices made by instructors but not assigned as a subject from the design curriculum or at the program of studies level. This drives to fragmentation, repetition, and disconnection between similar design assignments that could be unified, connected or complemented.

Sustainability can be seen as a theme for a typography project, as a topic for delivering a poster or a campaign, as the topic for a photo assignment, as an infographic about climate change, or as a factor to consider when designing an object, a garment collection, etc. In none of these typical cases sustainability is taken as the root of the subject of study but as a pretext to keep delivering traditional design solutions to traditional problems of design, with partial or no critical thinking applied. In best cases the so-called "greener" designs are only functional solutions to the surface of the problem.

In a meeting at one of the design schools I teach, after I exposed the advantages of extending the teaching of DfS to the core of the program by introducing a focused course, one colleague involved with curriculum development clarified that "we have already included sustainable design all along the content of the curriculum in the last years, and we were planning to include more in the future" referring to the inclusion of the topic into projects and assignments of traditional design subjects, and suggesting that it was the right track to follow.

Sadly, this is comparable to justifying not having a focused course on typography or photography in a visual communication design program, since these two subjects are present in most of the projects taught in most of VCD courses. The difference between students taking focused courses on typography or photography in visual communication design from those who are not is noticeable in the results, at school level and in professional life.

Such a difference can be expected between designers who don't have the appropriate literacy and training on DfS and designers who acquired DfS literacy at higher education.

The current way of approaching sustainability in design schools has it consequences in the practice of design. Greener design –a generalization of sustainable design– has not had any positive tangible effects whatsoever on changing mainstream industry in the 20th century, nor changing consumerism habits, waste of resources, or promoting massiveness of renewable energy, among many other factors related to sustainable development. On the contrary, results accounted indicate exactly the opposite trend. Still today, GHG emissions keep growing hand-in-hand with consumerism driven by mainstream media and advertising. Electronic gadgets are designed for faster obsolescence, creating more waste and dumping more dangerous components every year. Paper industry is still one main global polluter of air and water and agent of forests depletion, driven by the consumption of printed media, advertising, and packaging2.

This timid interpretation of sustainability in design education is not new though. Ecodesign or green design projects have been included in traditional design education for half a century, but only recently some design programs are including the subject in an integrated and focused manner. Three pioneers in focusing design for sustainability are Politecnico di Milano (Italy), Aalto University (Finland), Delft University (Netherlands), and many other schools have followed them, the list gets larger every year with great examples of courses, programs and even entire design schools focused on sustainability. As a result from a focused approach to DfS, through collaboration and partnership between these design schools, local industry and international organizations, new spaces for DfS education, research and design implementation have been created, such as LeNS –The Learning Network on Sustainability, and DESIS – Design for Social Innovation towards Sustainability Network3. In Canada, universities and colleges see the opportunity to lead and develop design programs focused on sustainability, like the Environmental Design Masters and PhD program at University of Calgary4, or more recently the Environmental Visual Communication post-graduate program at Fleming College, Ontario5. Other schools with strong environmental studies programs such as York University, University of British Columbia, University of Waterloo, University of Saskatchewan or the University of Alberta, just to mention some of them, do not include yet a strong design for sustainability focused program neither at undergraduate or post-graduate levels.

Some design schools nevertheless are making efforts to respond cohesively to academic integration of the subject working together with offices of sustainability, as it is the case of the Department of Design at York University/Sheridan College in Canada. Colleagues of this department created the Sustainable Design Research Lab –SDRL, with the idea of connecting scholars and students' work on sustainable design with research and curriculum development in mind. The limitations found there to integrate sustainability as a core subject are similar to other universities, as a colleague from SDRL describes:
"We are hoping to develop more cross-disciplinary curriculum in sustainability at Sheridan but that may take some time. There are a lot of faculty who are interested, we just need the time and resources to collaborate… Seems like this is a similar problem at many institutions but it is exciting to be at the start of something, frustrating at times for sure, but I'm still optimistic."

In order to integrate the teaching of design for sustainability in a focused manner at all levels in post secondary education in Canada, we may take a look to not only good examples abroad but also good examples nearby, and not only focused subjects in design but also other disciplines dealing with similar challenges.

One subject of study that deals with the risk of fragmentation, disintegration and the challenges given by an interdisciplinary environment is the field of humanities computing or digital humanities. I have worked as a designer and researcher in this emerging field for some years aside designers, program developers, librarians and scholars in English Literature and Textual Studies, and find that in contrast to what we see in design fields integrating sustainability, Digital Humanities is progressively integrating the focused teaching and researching on the subject of humanities computing more and more every year, building a strong network across Canada, North America and worldwide. A proof of this is the creation of important associations like the Canadian Society for Digital Humanities – CSDH/SCHN6, and the Alliance of Digital Humanities Organizations –ADHO7, and the creation of networks like the INKE Project Implementing New Knowledge Environments8 and the Digital Humanities Summer Institute –DHSI9. These initiatives play a crucial role for connecting students, educators, and researchers alike with projects and opportunities through the organization of conferences, workshops and other spaces for collaboration.

Initiatives like LeNS or DESIS are definitely in tune with this idea of integration and focusing, however this is not reflected in the situation of current teaching at design programs, particularly in Canada.

FOCUSING DFS EDUCATION ALSO MEANS BEING OPEN MINDED

Crucial questions like:
Do we need to design this?
How sustainable traditional design solutions are to the problems we need to address?
What do we need to sustain?
are not seriously formulated along the design process in traditional teaching. This makes the purpose of Design for Sustainability fail by making sustainability work for design instead of making design work for sustainability. Thus, the concept (sustainability) is reduced to a mere theme within a specialized design topic.
The phenomenon is not only property of the design fields. Specialization and over-specialization in many other fields has led to same effects: fragmentation and disintegration, professionals working in silos with lack of a holistic approach to problems. For the design fields, possible solutions to this problem were well described in the 70's by Viktor Papanek when he define designers as "generalists":

"Being a designer is also being a generalist. Since design has, by its nature, to work across disciplines, being a generalist designer demands having a broader view and understanding of the sources of the problems before moving forward and trying to solve them" (Papanek, 1971)

Being generalist means considering all the aspects of the problem (holism) while not loosing sight of the details. It means being reflective and including the details in a broader perception of the issues.

On the opposite side, reductionism and utilitarianism inherited from traditional design industry are very often dissimulated under the form of standardization. The connections between fields are limited to specific material needs, economic goals and production standards, but they don't share a conceptual framework or a common ground. Join forces in this way does not mean more accuracy on understanding where real problems are, but is rather conductive to losing a sense of context.

Fragmentation will not bring diversity. Yet, diversification without integration can lead to even worse effects on design education.

In contrast to what we see in traditional approaches to design education, a focused curriculum of Design for Sustainability proposes an adequate space to cover all the necessary aspects of design oriented to creating solutions for a sustainable future.

A DfS curriculum is inclusive. It comprehends the most important content for sustainability practices from other disciplines. An entire course or program of studies like this brings to the design table all the subjects related to other disciplines and sciences in connection to sustainability and outside the design environment. DfS is more than what students can experience either from the traditional design program or from environmental design studies (fig.1)

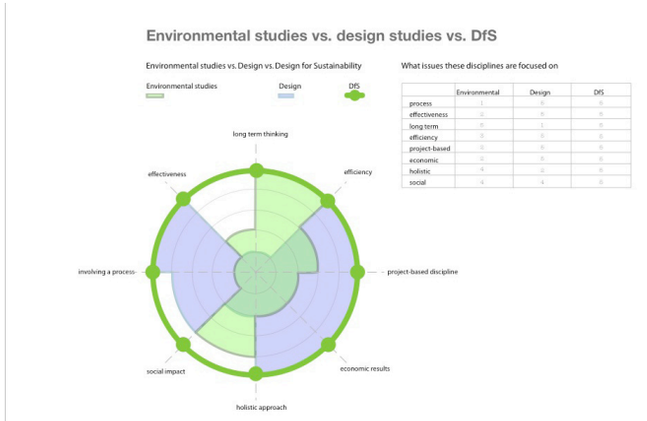

Figure1
Taking focused courses on Design for Sustainability covers much more than taking Environmental Studies and Design Studies courses separately. This diagram compares the covering of main concepts by a focused program versus other related programs.

It also integrates all the design fundamentals from traditional practice to the practice of sustainable design.

A typical DfS response to a problem would be "Why is this a problem and what it causes it?" It is not about know-how but about know-why (Orr, 2002). Designers can be problem identifiers in addition to problem solvers, and design critical thinking is a way for constructive questioning in DfS. For instance, in a typical visual communication design problem such as designing a poster, designers with DfS in mind will question the nature of the job, asking What is the effect and behavior we want to see in our target audience when reading the poster? Is it a poster the format that will address that effect more successfully? Can we achieve the same effect without printing a thousand copies? or Is this design solution creating other problems? What other problems?

The more exposed designers are to deal with constraints and limitations –implicit in different degrees when addressing design problems, the more the chances for designers to acquire the necessary training to turn complexity into quality.

PROSPECTIVE TEACHING: TOWARDS DFS INTEGRATION

While working on my Masters thesis project on the subject of Design for Sustainability in 2007, I established a set of research questions formulated for the study and later addressed by the creation of new curriculum (Fiorentino, 2008, p.19).

Based on these experiences, the first question we may ask is: "How can design, and designers, play a more meaningful future role in connecting design and sustainability", and the subsequent questions derived from it:

What knowledge do designers need to address the issues involved in Design for Sustainability?
Designers need a broad selection of content, based on the core issues of sustainability –social, environmental and economic aspects– and the redefinition of the role of design. But this is just the basis for building a broader understanding, which can be acquired by practicing DfS. The DfS curriculum introduced by my thesis project was oriented toward this broad selection of content as a first step towards DfS literacy.

Can future designers be trained for a responsible design practice with long-term effects? How?
The answer is yes, as long as this preparation starts early enough during design education, and as long as this preparation includes a shift in design thinking, facilitates the comprehension of core concepts, and encourages the implementation of DfS values and principles. The concepts introduced by the DfS focused curriculum approach and promote responsible design practice and long-term design thinking.

Are the actual design programs adding these issues at an appropriate rate and depth?
As demonstrated in my thesis research, DfS is not widely understood, approached, planned and implemented currently at most design programs or is not being done as quickly as the circumstances require. Ideally, a design program should include DfS as core content as soon as possible, following the design principles of being proactive rather than reactive. The first concerns about sustainable design were raised four decades ago, and the need to act is becoming more and more urgent.

How early can future designers approach these issues from a design perspective?

It is true that the earlier the notion of sustainable design is introduced the better it is for students to consolidate their knowledge. It is also true that a minimum level of

design literacy is required prior to working with some DfS concepts. For this reasons, a DfS curriculum can be approached at different levels with different grades of complexity. With the first results of the study in hand, I originally recommended a focused DfS education for intermediate level (third year of design studies) or from junior (second year) to senior (last year). However my current work at the University of Alberta is dedicated to include DfS literacy from first year of studies or design fundamentals level. Design studies program at the University of Alberta uses a unique route system that allow students in the second year to follow orientations in engineering, business and marketing, computer science, printmaking and social sciences10, along a general route for either more traditional areas of design or more disciplinary combinations. The ultimate goal of my work on this matter is to include focused DfS courses from first year as a Design for Sustainability Fundamentals, and from second to last year of studies as a new route for Visual Communication and Industrial Design BDes degree.

The prospect of teaching focused content on DfS at the University of Alberta was unthinkable a few years ago when I started my masters studies, however things have started to change for good. At a graduate level, the MDes program has seen the number of students interested on the subject of sustainability increase noticeably. The graduate program of design is focused in building student's capacities for academic research and providing masters candidates with instructional skills. Assisting other instructors of the design program is crucial for many graduate student who has interest in teaching. Many of these graduate students interested in the subject of sustainability are prospective design educators for future focused DfS courses. My original thesis work in addition to my current research work and curriculum development efforts may play a relevant role in consolidating DfS focused teaching at this university in the coming years.

In addition to focusing DfS in the design programs, DfS education has also turned into a very strong interdisciplinary, multidisciplinary and cross-disciplinary field of study. A proof of this is the interest manifested and by other programs of studies outside design in integrating DfS as an alternative for enriching their teaching on issues connected to sustainability. One of these examples is DfS at the Human Ecology program [Hecol 493]11. Hecol 493 has been taught since 2010 and it will continue so for the next years. A second DfS course is being considered to start hosted by the Faculty of Extension at the University of Alberta in summer 2013. There are more opportunities for teaching DfS in other fields connected to design at the University of Alberta as well as in other design schools.

The inclusion of DfS in other programs of study gives design students access to other areas of contact for sustainability literacy and practice [interdisciplinarity].

This means bringing new fields of interest to the design table and acquiring a broader sense of design. Including DfS in those programs also brings students from other disciplines the opportunity to collaborate in multidisciplinary design teams and projects. In many cases it allow students to be introduced to the disciplines of design. Both kinds of DfS students, the ones with design background and the ones coming from other fields, use DfS as a catalyst of their particular points of interest. The benefits are even bigger if we also consider that the results of these cross-disciplinary experiences help students to better understand aspects of their disciplines by comparatively relate their fields to other fields, and move boundaries towards more innovative approaches.

Focusing the teaching of DfS in design programs in addition to integrating DfS with other disciplines can be only of benefit for any program of studies addressing the challenges of a sustainable future. The current fragmentation of teaching sustainability in design programs is the down-side of forcing new concepts to adapt to old lines of thinking. There is a systemic reluctance to change in the traditional academia, and design education cannot escape to this constraint. The consequence of an inconsistent inclusion of sustainability to design programs are poor results observed in case-studies, research and innovation. Design education is traditionally aligned to industrialism, and industrialism leads to the current crisis of sustainability that design needs to address.

A change of mentality is imperative in our design schools, as well as the courage from educators and administrators alike to help design moving to the next evolutionary step.

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ON LINE SOURCES

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LeNS: http://lens.polimi.it/
DESIS: http://www.desis-network.org/
evds: http://evds.ucalgary.ca/content/phd-environmental-design
Fleming College: http://flemingcollege.ca/programs/environmental-visual-communication
http://csdh-schn.org/
http://adho.org/
http://inke.ca
http://dhsi.org
Department of Art & Design, University of Alberta http://www.artdesign.ualberta.ca/en/Undergraduate/Design_Studies.aspx
Department of Human Ecology, University of Alberta http://www.ales.ualberta.ca/Courses/HecolCourses

NOTES

1 Triple bottom line sustainability strategy is based on sustainable development goals proposed by the Brundtland Comission in 1987. Brundtland, G. H. Our common future / World Commission on Environment and Development. (1987)
2 http://www.designcanchange.org/#/issue/problem/slide6 (slides 6 to 8)
3 LeNS: http://lens.polimi.it/ DESIS: http://www.desis-network.org/
4 evds: http://evds.ucalgary.ca/content/phd-environmental-design
5 FlemingCollege:http://flemingcollege.ca/programs/environmental-visual-communication
6 http://csdh-schn.org/
7 http://adho.org/
8 http://inke.ca
9 http://dhsi.org
10 Retrieved on September 2012 from http://www.artdesign.ualberta.ca/en/Undergraduate/Design_Studies.aspx
11 Hecol 493 syllabus is available at http://www.ales.ualberta.ca/Courses/HecolCourses/~/media/ales/Courses/Hecol/Hecol493/Courses_HECOL_493_Spring_2011.pdf

Ensino / Education

GRAPHIC DESIGN WORKBOOK: ACTIVITY-BASED ONLINE SELF-EXPLORATORY TOOL

Tina Sleiman
Yunsun Chung-Shin
Zayed University, United Arab Emirates

ABSTRACT

We are living in a context where almost everything seems vastly available; students have a wealth of resources that are tremendously useful to them as designers. Yet a place where information is consolidated, like a comprehensive sketchbook, is needed. After looking at various contemporary workbooks, as well as interviewing students, we identified that an online workbook would help design students plan their learning path. We propose a virtual workbook as a multifaceted self-exploratory tool developed with the design methodology of 'Prepare-Discover-Consider-Observe-Practice' and supported by an online platform where interaction and exchange are possible among students and faculty from various institutions and countries. This workbook offers an array of diverse playful activities and cross-collaborative exercises designed to assist students in understanding design thinking, and help them plan their future professional practice. The website www.graphicdesign-workbook.com is currently in the prototype phase. Some content has been used within courses in the previous academic year, and we plan to use the full content as a course.

KEYWORDS

Design Education, Graphic Design Workbook, Learning Portal, Holistic Conceptual Framework, Prepare+Discover+Consider+Observe+Practice

1. INTRODUCTION

As design tools, specializations, and possibilities expand; students are finding it harder to grasp what, why, and how they should be studying, or conceive that their acquired skills and knowledge are part of one path. In this increasingly complex learning field, a holistic conceptual framework or tool is required to assist students in this process. This tool might be an effective tool as an element of foundation courses. Our study consists of building a multifaceted educational tool that targets and connects students and instructors in the field of design across different institutions from the MENA (Middle East and North Africa) region, and eventually beyond.

The workbook has five main goals: 1) To provide students with a foundation for becoming active and independent learners, 2) To ultimately facilitate students to become designers with a capacity to rebalance nature, humanity, and technology. 3) To prepare professional possibilities for design students as our field becomes more interdisciplinary and 4) To connect students and instructors in the field of design across institutions throughout the region through an array of cross-collaboration projects and 5) To invite other faculty in the field of design to connect their learning experiences in order to build a common design pedagogy together.

Why workbook? Our students are visual learners. According to our survey, many students prefer visual workbooks and online tools to traditional learning tools such as textbooks. Therefore, we propose an interactive workbook that would introduce students to the methodology mentioned above as well as enable them to keep a visual log of their progression and expansion throughout their design education. Eventually this workbook would help them self-guide how they want to plan their future professional practice and meet the demands of being an effective, socially conscious and innovative designer. Each section contains step-by-step activities that would enhance their critical thinking.

2. LITERATURE REVIEW

In order to meet today's challenges and to grasp the vast array of opportunities, Davis suggests flexible curricula, where students become active learners in a customized environment (2010). Today, it is widely acknowledged that design is a need to society, and in particular socially responsible design. Different fields recognize the importance of design thinking and have come to incorporate it. Within this framework, societies

have been trying to enhance their cultural identities through design. More, and more, technology has been supporting design. Recognizing the beautiful integration and connections between conventional and new graphic design practices, it is exciting to envision the role of design education in the future. We have explored graphic design workbooks available today in the form of exercise-based workbooks, specialized skills workbooks, and sketchbook-style workbooks through synopses of their structure and content. A case study of an online workbook and an online preparatory course are discussed below:
The Designer's Workbook, attributed to IDEO and available online for free downloading, provides immense help along the design process through with a hands-on methodology (through small exercises). For the third year in a row, British Open University is running an activity-based online curriculum for a large number of students (currently 250,000 users). Students work on introductory design assignments, upload their work, and interact with other students (Lloyd & Jones, 2013). Still, an online workbook that prepares students' design learning path, and offers a chance to collaborate with students and faculty from different universities in various countries remains unexplored. We are attempting to fill that gap.

In our workbook, we aimed to build a user-centered interface where the most of the workbooks listed above have achieved: easy of use and fun to explore. Since the aim of our workbook is to help students find their learning path, the exercises are more focused on the individual and what he/she can contribute based on his/her background, personality, specific interest, etc. The workbook is adaptable, meaning that it remains relevant to social changes, individual's needs and industry expectations.

3. METHODOLOGY

In sync with Meredith Davis' call for flexibility across curricula and classroom boundaries, we considered technological integration of the content into an interactive website. The resulting tool aims at fostering active learning since students can navigate independently through the tool. It also aims at creating connections and interactions as various classrooms in remote places work on activities in parallel while being able to view each other's uploads. To achieve this we formed a team: a branding designer (Aisha Baqrain), and programmers (John Bruneau and Kyungwha Lee), as well ourselves as art directors, to build an online learning space that maximizes self-exploratory learning and involves students as co-creators. The tool is designed for students to easily access resources, experts, and share their ideas and outcomes with other students. Currently, we have a linear interface user-workflow, which allows uploading of and

viewing of others work. The current version allows users who are well connected with social network tools such as instagram, twitter, facebook, etc. to easy to explore and consolidate their data for their learning content. The mobile and iPad interface have been considered and tested within the responsive design parameter.

4. WORKBOOK STRUCTURE

The site targeted two groups of users: the general public and registered users. The homepage of the online space, which can be accessed from the link, www.graphicdesignworkbook.com, gives the public access to design news, alerts and discussions within the design community. Registered students on the other hand, can explore the workbook at their own learning pace customized by their instructors. Students view other participants' work, read contributors' notes, and access essential online resources. As students explore content, and expand/exchange their knowledge and insights, a virtual learning network can organically grow connecting learning communities.
In the workbook, students go through the following steps:
(1) PREPARE - shifting from passive recipients to active drivers;
(2) DISCOVER - world, people and themselves;
(3) CONSIDER - what design is, why it exists and how it is done;
(4) OBSERVE - what has been achieved within their region and envision how they can contribute to their own visual culture with their own stories;
(5) PRACTICE – designing for themselves a holistic design education and practice

These five categories under which a number of activities are presented, supported by an introductory text, contributors' notes, a list of resources, and direct access to other students' uploads.

5. CONCLUSION

The goal of this tool is to strengthen a foundational layer to our curriculum that fosters confident designers who are able to think critically, addresses the rapid shift in the design industry with increasingly demands, and understand how design is connected to various different industries. In the ICOGRADA Design Education Manifesto 2011, the future of design education is described as follows: "The role of a design educator shifts from that of knowledge provider to that of a mediator. . .The power to think the future near and far should be an integral part of design education and practice

through research." This study strives to facilitate students to become designers with a capacity to rebalance nature, humanity, and technology by harnessing their capacities in experiencing multiple layers and complex webs of information, perspectives, and wisdom.
As we have tested the clarity and efficiency of content with various groups of students, the content has been refined and interface has been modified to maximize the easy of use and fun. The plan is then to start user testing at various institutions from multiple countries in the MENA region: The Middle East Design Educators Association (MEDEA) has suggested that it could facilitate participation from students and faculty from Egypt, Kuwait, Lebanon, Morocco and Qatar. Following that, content revision will be expected based on the above testing and focus groups, rewriting and possibly some reprogramming would be expected. In the future, we would like to implement a non-linear 'Zoom-In-Out' feature, which allows users to revisit and continue building content outside of their course timeline, including features such as: customizable control panel, and external assessment. Looking forward, we foresee that this tool can go beyond a design context and easily expand to host interdisciplinary learning modules where content is co-developed by several faculty members from different majors.

It is our hope that this workbook ultimately would influence design practice in the region on both the individual and collective levels believing that design can connect the students' passions to building visual characteristics and voices for the region.

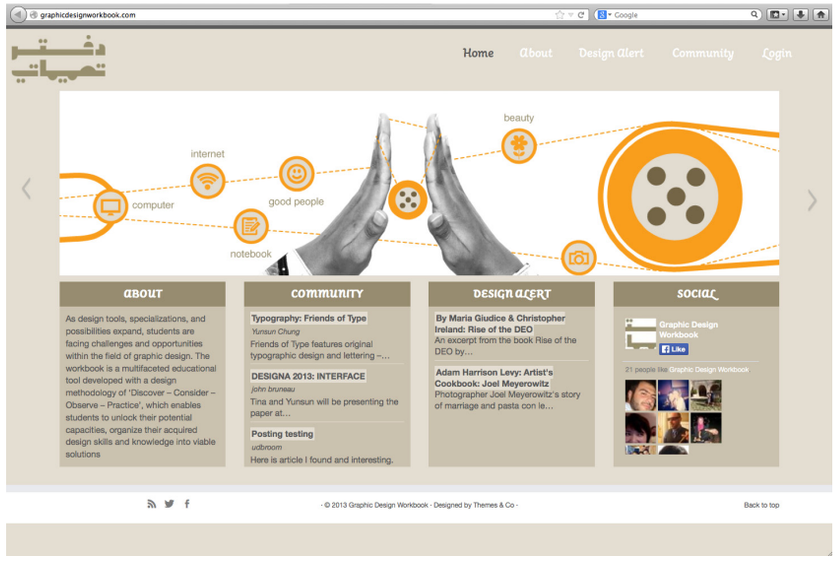

Image 1 - Website Homepage

Image 2 - Welcome Page to the Prepare Chapter

Image 3 - Welcome Page to the Discover Chapter

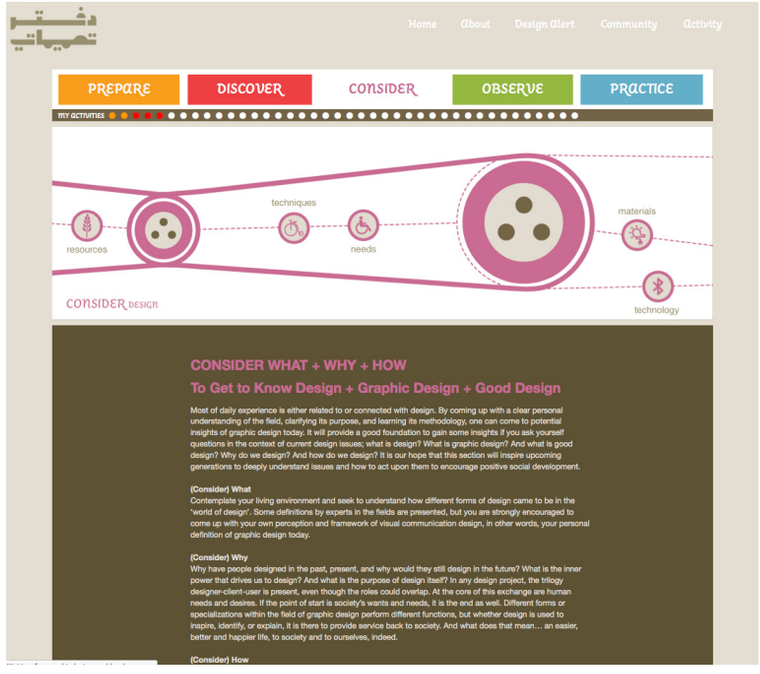

Image 4 - Welcome Page to the Consider Chapter

Image 5 - Welcome Page to the Observe Chapter

Image 6 - Welcome Page to the Practice Chapter

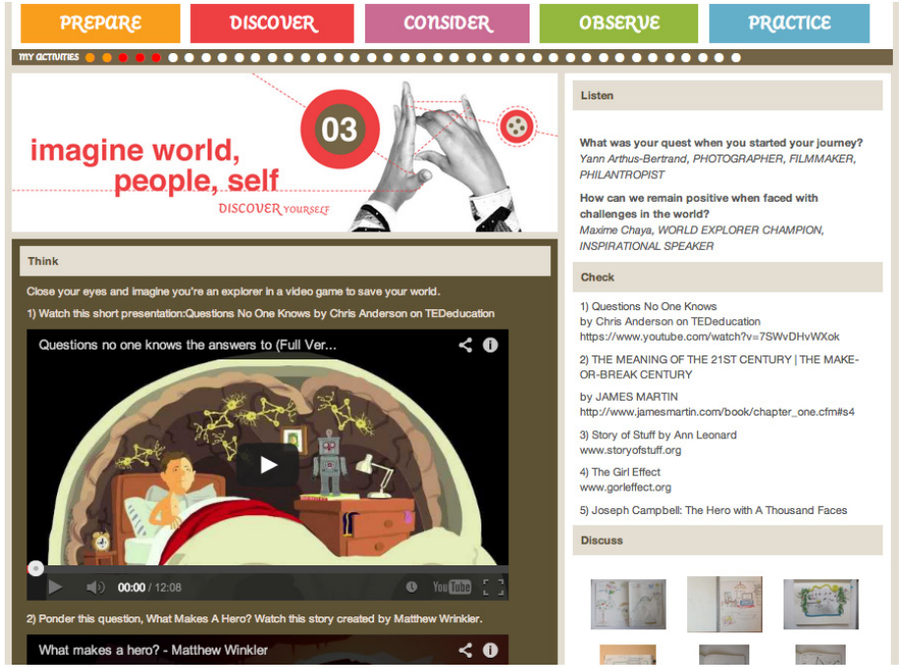

Image 7 - Activity Page Example

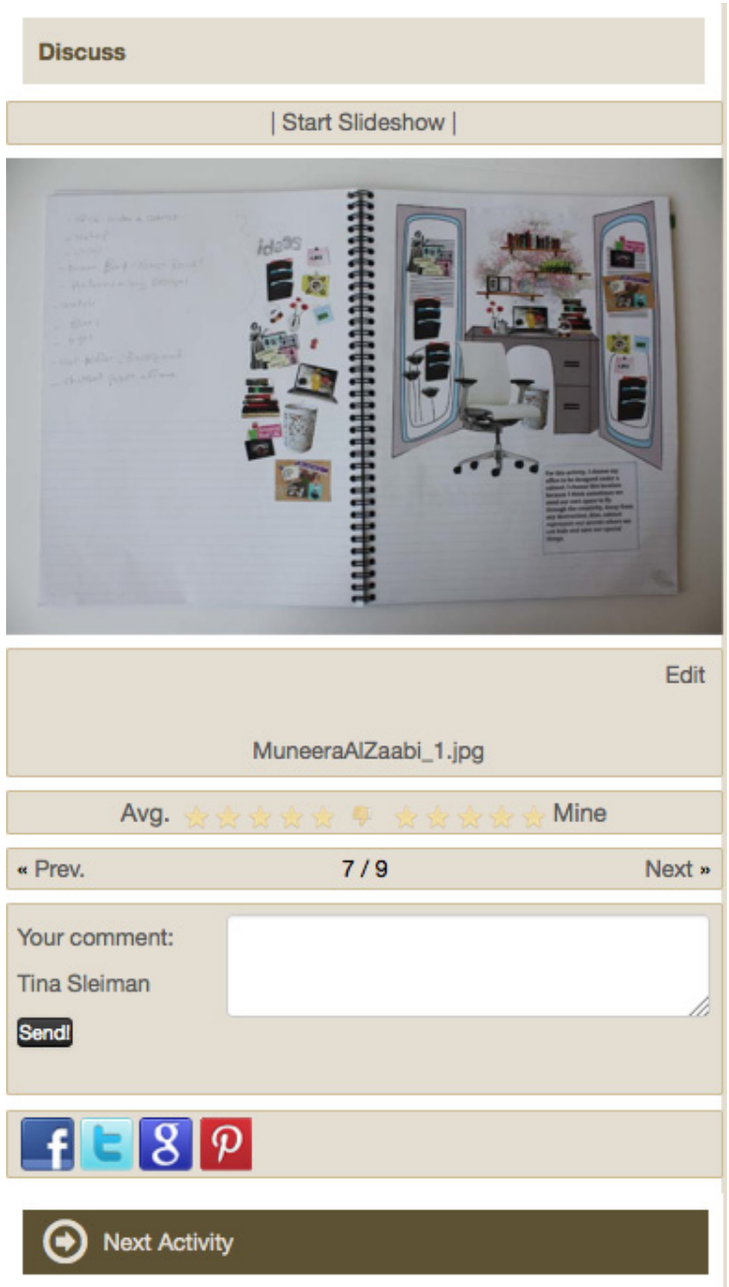

Image 8 - Example of an Activity Submission by a Student (uploaded image)

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CURRICULAR LEARNING CURVES: GRAPHIC DESIGN AND INTERACTIVITY

David Gelb
Department of Design, York University, Canada

ABSTRACT

Within the context of graphic design, interactive media poses many similarities but also stark differences to the fixed nature of print-based media. Interactivity has opened up the scope and reach of graphic design, transforming the practice from a tradition of print-based values, to a broad approach in which designers are also inventing the interactive medium. In keeping with current practices, how has graphic design education transformed from an orientation on print-based values to an expanded field of interactivity? This presentation asserts that an integrated graphic design curriculum can adapt to the changing role of designers and prepare them for contemporary circumstances

KEYWORDS

Interactivity, Design Education, Graphic Design, Interactive Design, Design Pedagogy.

Graphic design, as it is currently known, is being shaped by speedy technological and cultural changes that call into question the relevancy of current design teaching practices in North America. Consider how graphic design has evolved over the past 20 years from primarily a print-based practice to a digital practice. With new formats, tools and processes redefining ways of working, how has design education responded, or more specifically, how have graphic design pedagogies maintained currency with interactive design practices? This paper argues that traditional pedagogies are no longer effective in their response to how graphic design is evolving under current technological and cultural conditions.

To demonstrate some of the core principles of interactivity design that directly impact how we teach (or should be teaching) graphic design in the 21st century, consideration is given to the notion of invention. The Oxford English Dictionary defines invention as "the original contrivance or production of a new method or means of doing something, of an art, kind of instrument, etc. previously unknown"(OED, 2013). In the context of interactive design, invention often comes in big leaps with no logical predecessors to model.

" Creating a virtual world, a social networking site, a media-playing device, a handheld communication device, a website for a newspaper or a television station are much more open-ended tasks that cannot be approached within a single-standard framework. They require us to reframe familiar practices to take advantage of new affordances in digital technology " [Murray, 2012].

This way of thinking about interactive design as invention is evident in the proliferation of new applications for smart phones and tablets that interface communication amongst people, devices and environments. A few recent examples include:

1. Nest (nest.com), a responsive thermostat that can be remotely programmed for adjusting home temperature.
2. August (august.com), a virtual key for locking and unlocking doors from a smartphone.
3. Square (squareup.com), a do-it-yourself credit card system with a swipe reader for mobile transactions.
4. Loop (loop.universaleverything.com), a frame-based tool with UI elements for touch screen animation.

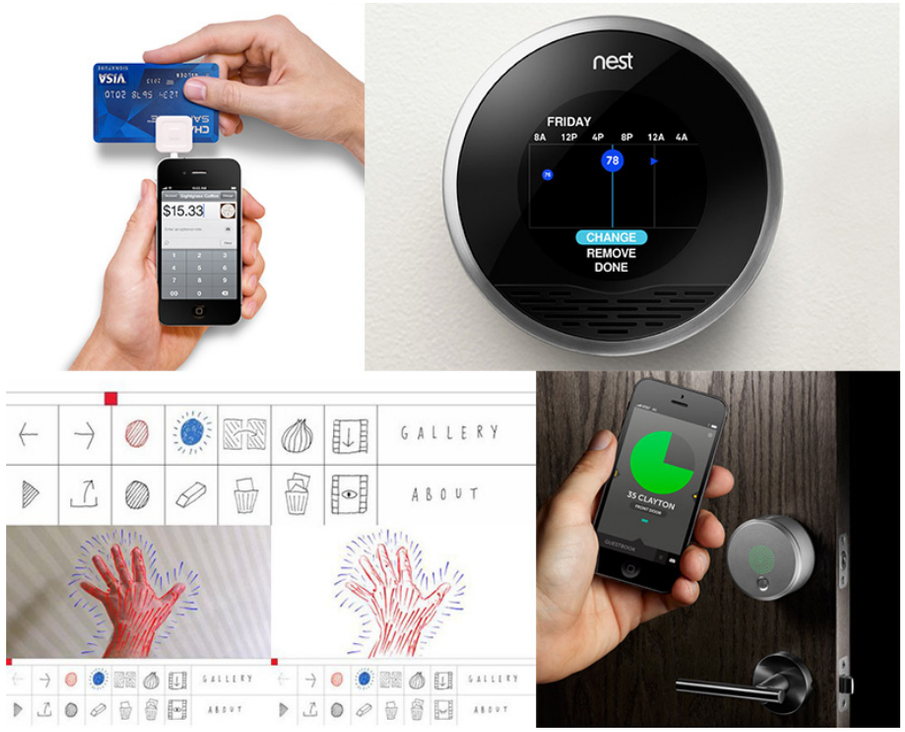


Image 01- From top left clockwise – Square (squareup.com, Nest (nest.com), August (august.com), Loop (loop.universaleverything.com)

These few cases represent an ever-growing territory of interactive design artefacts that have new and distinct functions with no previous models to act as starting points from which to build or improve. All of these recent interactive design artefacts are new inventions and cannot be considered refinements or derivatives of past products.

"Design patterns" are one attempt to organize and create a database of reoccurring interface elements. Patternry (patternry.com) is a library of elements that can be copied and customized to support the web design process. This approach assumes that prevailing interface elements are consistent, which is believable over the short term. However, as new interface trends arise, many of these interface elements become outmoded and fall off as technologies change and web design paradigms shift. Old patterns die as new patterns emerge pushing this strategy beyond its threshold and points to a continual state of design invention for those working in the interactive medium.

Framing a new design concern within a preexisting context of practice, materials and outcomes is a well-travelled road for problem solving in design. To adapt, reuse and refine is a normalized working method for graphic designers, especially in the realm of print-oriented work. For example, when faced with the task of creating a magazine, designers employ conventions like a cover, table of contents, pagination and header sections to provide a familiar informational and visual structure for both reader and designer. While the content or subject matter shifts from publication to publication, these established conventions are accepted and understood to create a consistent reading experience. Within the context of interactivity, the problem solving process does not always follow a similar route. Emergent devices, platforms and interface behaviours contribute to an open-ended design process. Design requirements are multifaceted and the dematerialization of interface properties demand entirely new ways of creating user agency with the content. There is no clear and consistent path from ideation to implementation, but rather an exploratory and sometimes speculative approach into less familiar territory of the interactive medium.

Within an educational context, how can the curriculum adapt to the changing role of designers and prepare them for these contemporary circumstances? In the fall of 2013 an undergraduate design course taught at York University in Toronto tackled a project the called the Future Book Now (ysdn4003.wordpress.com). This project began by examining the current state of digital publications and considered the possibilities of inventing a new form – neither a definitive eBook or website but something new that affords unique ways of interacting with visual forms and text.

Image 02- Shayna Lauer, The History-Future of the Newspaper, 2013

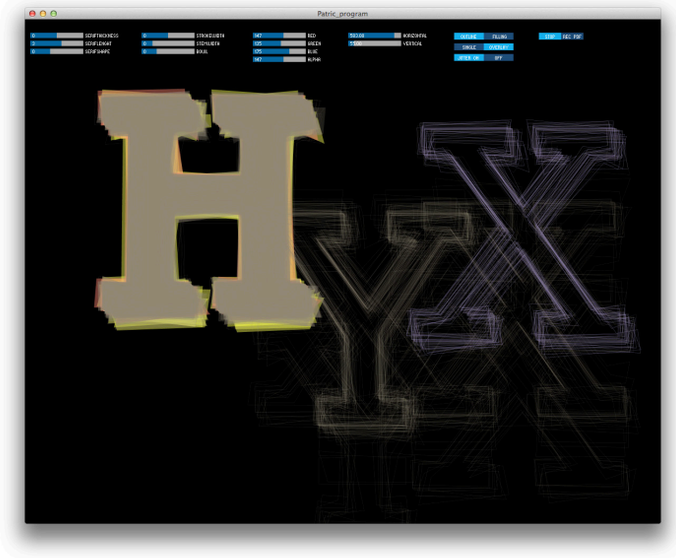
Working and thinking in this way is a departure for designers, even those used to facing many unknowns, and sharply contrasts a print-based approach where the output medium is in a fixed state. How does graphic design education, which has been heavily steeped in a print-based mindset for decades, recalibrate to meet this current reality? This concern is amplified by the dominant pedagogical strategies found in most North American design schools that are guided by an orientation towards print-based media and are therefore limited in their ability to teach and learn about interactivity. Much of the curriculum is organized around segments of graphic design products - courses like Book Design, Editorial Design, Packaging Design, Type Design, Information Design, Motion Design and Interactivity Design. Partitioning the practice into individualized courses always seemed a necessary approach to create specialized studio classes centered on developing a set of skills and knowledge to create products - a new book, a typeface, a poster, package or a website.

Too compound this separateness, the default curriculum provides a single interactive design class to learn about web technologies. These interactive classes are often run as software demos and tutorials with less emphasis on visual acuity as found in concurrent 2-D design courses. Ultimately this can sour some students and leave faculty panicked to keep up with the surge of new technologies, methods and tools. In this pedagogical model, students amass new skills but it can further compound the segmentation of the curriculum into isolated design products rather than an integrated body of one's own design work. The graphic design student experiences a fracturing of their personal practice; that somehow interactive design is different from other segments more closely associated with print-based values [Davis 2008]. This is not a critique of print design pedagogies but a recognition that merely transferring it's media dependent values over to designing in the interactive medium has proven itself to be inadequate

Douglas Rushkoff in his book "Program or Be Programmed" says "we must learn not just how to use programs but how to make them", [Rushkoff, 2011]. Rushkoff notes, that mass media like books, magazines, newspapers and television are "read only" or one-way communication channels while digital media is "read-write" meaning it can be modified and shared [Rushkoff, 2011]. This ability to create, reshape and customize digital media is at the core of interactive design and is activated through computer code. Learning to code fosters a techno-creative fluency that contributes to the "ability to be flexible, nimble and dynamic in practice" - which is listed in the American Institute of Graphic Art's Designer of 2015 Competencies [AIGA, 2011].

The practice of creating imagery with code encourages students to move across media with curiosity and confidence to invent new creative forms and functionality. This is typified in a graduate student project at York University that demonstrates the coming together of a coding problem to invent new typographic forms.

Through building a basic vocabulary of coding principles, this student with no prior



ır users to create
ring the potential
for others to gen-

Image 03 - Franziska Erlebach, Patric, 2011

This work uses the software Processing which is a coding environment intended to teach basic computation to designers and artists with little or no experience. It is ideal for teaching purposes as it provides “software literacy within the visual arts” [Reas, Fry, 2007]
In closing, these observations and analysis of interactivity and its relation graphic design education is not complete and merely touches on ideas that developed through creative research and curriculum development. These pedagogical challenges to graphic design curricula will not go away but are now the new normal as the world of interactivity expands and transforms the practice of graphic design. Design educators play an important role in not only preparing our students for professional currency, but also an opportunity to lead and influence future design practices by what and how we teach.

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FUTURE DESIGNERS:EXPLORING THE INTERFACE OF A CRITICAL DESIGN PEDAGOGY

Aidan Rowe
University of Alberta, Canada / Fachochschule Münster Germany

ABSTRACT

The role of design and designers has drastically changed. Designers now work across and with a variety of fields, organisations and people and are as focused on outcomes as outputs.
This shifting landscape of, and for, design presents challenges, including how we develop programs to educate designers who are able to: ask questions and design artefacts; address complex social issues; and, work in a world where an aretefact is designed on one continent, produced on another and consumed in a third.
How do we educate critical designers that can embrace these opportunities and lead the field of design?
Three key areas needed in such a program are: opportunity to work across and with other disciplines; greater integration of participatory and collaborative design methods; and, further focus on the lens of culture.
This paper documents projects to further develop a North American design program in light of these areas. By situating and examining these three areas we better prepare the designers that are needed to address the challenges of the future.

KEYWORDS

Design Pedagogy, Critical Design Education, Interdisciplinarity, Participatory And Collaborative Practices, Cultural Interrogation

FUTURE DESIGNERS: EXPLORING THE INTERFACE OF A CRITICAL DESIGN PEDAGOGY

The role of design and designers, has drastically changed. Once, the designer served as a detached expert solving a client's defined problem. Designers now work across, and with a variety of fields, organisations and people and often are as focused on outcomes as outputs (Danzico 2011, 69).

This shifting design landscape presents challenges, notably how to educate designers who are able to: identify problems and design artefacts; address complex social issues; work in a world where an aretefact is designed, produced and consumed on different continents; and, articulate the larger role that design needs to play today.
How do we educate critical designers that can embrace these opportunities and lead the field of design?

Three key areas needed in this education are: increased opportunity to work across, and with other, disciplines; greater integration of participatory and collaborative design methods; and, further focus on the world through the lens of culture.

This paper presents research in a North American design program exploring these issues. It begins by noting changes in the field of design and changes, or lack of, in design education. Two projects are presented that explore the identified areas, and benefits and challenges are discussed for furthering design education through these areas.

As Donald Norman notes "Complex problems are complex systems: there is no simple solution" (2010). Designing educational programs to address today's needs is complex. Interrogating the areas of interdisciplinarity, participatory & collaborative practices, and cultural interrogation in design education better prepares the designers needed to address future challenges.

DESIGN: A SHIFTING DISCIPLINE

There is growing recognition for design to address complex societal issues facing the 21st century (Icograda 2011, 8). To support this there has been an expanded use of participative design models, shifting to a user and society-centric model (Sauter 2011). Crucially much of this reconceptualization of design shifts the focus from artefact production to outcomes (Frascara & Noël 2012, 45).

The complexities of current design issues require interdisciplinary cooperation (Ruecker 2012, 130). Collaboration is growing across the world, through time zones and languages where designers work with a myriad of communities and cultures (Pedersen et al, 2011, 79). Advances in technology, globalization and shifts in manufacturing have transformed the dominant local design, produce and consume model (Yee, McKelvey, & Jefferies 2009, 3).

The changes at design's vanguard are not as apparent in design education (Davis 2011, 73).

The traditional design educational model—particularly in Western contexts—creates in the class a simulation of professional practice, with students completing diluted representations of studio briefs. Often the briefs' richest learning—their complexities, questions and possibilities—are removed (Canniffe 2011, 2).

This approximation of the design profession does not prepare students for the profession, let alone for the growing space that design now practices in (ibid., 1). As Meredith Davis notes the "vast majority of design curricula promote a 20th century vision of the field that is increasingly irrelevant for contemporary issues and scholarship demands." (2011, 73).

Students need suitable learning experiences to become critical designers. They need to work on complex briefs situated in and out of the studio with robust opportunities for genuine learning (Canniffe 2011:4). Communication skills need to be developed in global and local contexts—with other cultures, practitioners and clients.

Students need to learn in environments that better reflect, and predict, the futures of design.

Three key curricular areas at the core of this design curriculum are:

• More opportunity to work across, and with, other disciplines Interdisciplinarity;

• Integration of collaborative and participatory design methods and practices into the studio Participatory & Collaborative Methods & Practices; and,

• A focus on the changing world through the framework of culture The Lens of Culture.
These three areas are not the only ones to be addressed, there are other changes needed in light of local conditions and requirements. This is also not an attempt to create a perfect design curriculum, but furthers a conversation, one where we "abandon the idea of training designers, and get on with the practice of educating them" (Frascara 2007, 7).

INTERDISCIPLINARITY AND PARTICIPATORY & COLLABORATIVE PRACTICES

"Today, professional design practice involves advanced multidisciplinary knowledge that presupposes interdisciplinary collaboration and a fundamental change in design education." (Friedman 2012, 150)

Social Design and the Health Humanities (SDHH) was a collaborative project run in 2013 at the University of Alberta, Canada. It brought together students from Design Studies (DS) and from Medicine & Health Professions (MHP) to work in interdisciplinary teams. Working with community partners these teams identified local health issues and visualised design concepts.

The SDHH project was designed to explore emerging design possibilities through two of the above identified areas, specifically: Interdisciplinarity, and, the integration of Participatory & Collaborative Design Methods and Practices.

16 DS students and 8 MHP students completed the project, details included:

• Groups of 3 (2 DS & 1 MHP) who identified community partners to work with;

• Spring course with mixed student population across years;

• Nine-day project, with classes all day every day (M–F); and,

• Data collected from students, partners & academics.

The goal of the SDHH project was to create a learning framework that introduced interdisciplinary and collaborative & participatory methods and practices to create a more challenging design education experience.
The project began with a Visualisation Workshop to provide context in addition to introducing the students to working together. Teams then identified local health issues and community partners to work with. Employing qualitative and quantitative research to inform their design proposals, students presented final proposals to the class and community.

At the project's conclusion 8 groups presented their final proposals, examples included:

• Pedal for #YEG: An initiative with an end goal of revitalizing and unifying the city's cycling community.

• Break the Ice: A Design Strategy to Make Connections: Addressing issues of mental health and well-being. Our vision is a campus culture that is friendly, welcoming, & supportive.

• Calendaring Social Service Provision: A shared database between social service providers enables more efficient delivery of events and programming for at-risk youth.
ID198-01.tif Placement and Caption: Social Design and the Health Humanities Visualisation Workshop

Image 1 - Placement and Caption: Social Design and the Health

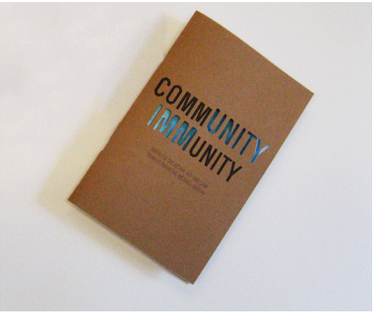

Image 2 - Placement and Caption: Social Design and the Health Humanities Final Project: Community Immunity

Image 3 - Placement and Caption: Social Design and the Health Humanities Final Project: Pedal for #YEG

Image 4 - Placement and Caption: Social Design and the Health Humanities Final Projects featured at InSight II: Engaging the Health Humanities Exhibition (FAB Gallery, University of Alberta, Canada

A project goal was to enable interdisciplinary opportunities for students. Encouragingly a DS student noted "It was valuable learning from students outside of design at the UofA, and a good exercise in humility as they contributed as much as the design students, if not more."

Crucially students had to recontextualize and communicate their own discipline knowledge and abilities to student and community partners creating opportunities for reflection. One DS student noted "Working with students outside of the Design program was a lot of fun! We all learned so much from one another and it taught us to communicate (sometimes we can get quite unaware of what goes on outside!)" Additionally in respect of these opportunities a MHP student remarked "This project was exciting and new to me. The best part was the interdisciplinary aspect of it!

Students also needed to devise research (qualitative and quantitative) and practice methods to better understand and work with distinct communities through all stages of a project.

The SDHH project created a learning environment that brought together students across disciplines embedding collaborative and participative design methods and practices in and out of the studio. Importantly the project involved participatory problem definition amongst all partners embedding an explicit understanding that a human-centred design approach to health and well-being involves community members in identifying, and co-creating solutions to, issues that affect them (Icograda 2011, 10).

THE LENS OF CULTURE

"And what should they know of England who only England know?" Rudyard Kipling, The English Flag

Students today live in a world that is both drastically contracted—with the ability to communicate globally nearly instantaneously—and expanded—opportunities for our students are only matched by their ambition and hard work. Additionally it is a world that, as Thomas and Brown note, is "characterized by constant change" (2010, 1). Today, there is a need for designers to be able to work in multi–and cross–cultural environments, both locally and globally (Lin 2007, 2).

How do we construct the environments needed to educate design students for the culturally diverse 21st century?

Created to interrogate culture through the design process, the Designing City Identities (DCI) project enabled Design Studies students at the University of Alberta (UofA), Canada to partner with design students in other cultures. It was proposed that inter- and intra-cultural possibilities would create meaningful learning experiences enabling students to become "better equipped and prepared to become global citizens" (Canniffe 2011, 4).

The project has run twice, in 2010 with the Hong Kong Design Institute, China and in 2011 with the University of Hawai'i at Manoa (UHM), USA. The UHM collaboration is featured here.

Key outcome considerations included for students to: experience working with designers from another culture; interrogate another culture and examine their own culture; employ qualitative and quantitative research methods and practices; and, to gain experience using online tools for academic collaboration and communication.

Pragmatic considerations included:

- 30 3rd year (of 4 year degree) students at both institutions.
- 13-week term, ran concurrently with other projects.
- UofA & UHM students were paired for the entire project. Each student worked as an advisor—offering insight on their city—and as the client—leading crits and formative assessment—for their partner.

• UofA (Edmonton) students designed Honolulu city identity, while UHM (Honolulu) students designed an identity for Edmonton.
• A central blog was used for communication and documentation by UofA & UHM academics and students.

The brief began with a class text exercise describing assigned cities and then comparing results, leading to discussion of broad stereotypes. Students then researched their assigned city through Flickr Galleries, this curation of other Flickr users images were presented to partners for discussion. In the design process students went through 3 rounds of refinement with the final identities and applications presented locally and online.

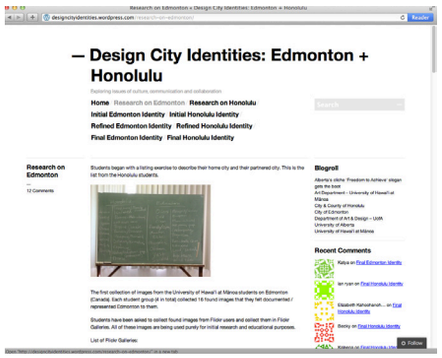

Image 5 - Placement and Caption: Designing City Identities Project Blog

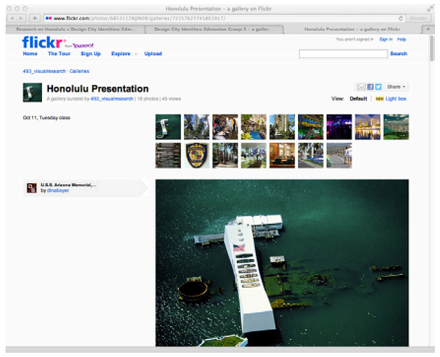

Image 6 - Placement and Caption: Designing City Identities Project Flickr Gallery

While designing an identity for a client is a standard brief, the DCI project introduced cultural, collaborative and communication elements to create a richer education experience.

The DCI project ensured students undertook research employing a variety of methods. In addition to class activities students also devised their own research methods—from interviewing people to exploring cultural documentation—to better understand other cultures. Importantly students recontextualised their research to their partners—who were also representative of what they were researching. A UofA student noted "It was very different and made us explore more and learn what we knew nothing about. It was tedious but enlightening."

Image 7
Placement and Caption: Identity and Applications for City of Edmonton for Designing City Identities Project

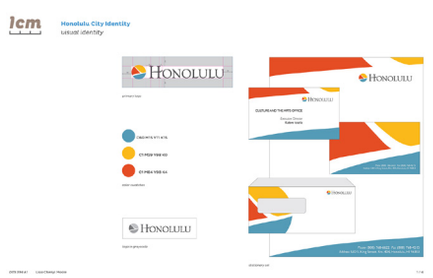

Image 8
Placement and Caption: Identity and Applications for City of Honolulu for Designing City Identities Project

Students devising their own communication means was important. Flickr and a blog were used centrally; students then employed means that best served them. Skype, facebook and email were used, placing these tools in a professional context in addition to providing alternative contributory models. In class we rely extensively on the visual—design outputs—and the verbal—in crits—while the use of writing—in

emails & blog posts—creates opportunities for reflection and different communication possibilities.

In respect of these alternative formats one UofA student noted, "I really think communicating by words was important to articulating my thoughts", another noted "I didn't know that Flickr could be such a great resource, especially for inspiration and getting perspectives all around the world." (UHM student)

Importantly students had to assume different roles. While communicating their own design work students also needed to analyse and provide feedback on the partner's work. This assuming of different roles—giving & receiving—was a valuable learning opportunity.

Acting as advisors forced the students to examine representations of their own culture. As a UofA student stated "By learning more about others, you learn about yourself". This self-reflection was crucial.

The DCI brief enabled students in Canada, USA and Hong Kong the opportunity to collaborate globally exploring current and emerging issues of design through the lens of culture. Importantly the brief created opportunities for students to examine, analyse and navigate through other cultures while providing reflective opportunity on their own culture revealing tensions, possibilities and opportunities (Goncu-Berk, DeLong, and LaBat 2010, 2).

CONCLUSION

There is a need for design education to address the shifting landscape of design (Davis 2011, 74). Designers are working in and across a range of fields and practices including areas as diverse as public policy, health, and planning in addition to more traditional areas of production (Burns et al. 2006, 6). Designers are increasingly acting critically, able to step out of their own culture—assessing needs, strengths and weaknesses—and having these observations inform their design practice.

In an interconnected world where design has the possibility of addressing the most pressing issues today design education needs to move beyond a craft based system. We need to build upon our strengths to create more genuine, robust and effective learning environments (Melsop, Gill, and Chan 2010, 1) (Canniffe 2011, 5).

Three key areas—and there are others—to address are: Increased opportunity to work across, and with other, disciplines; Focus on an expanded and shrinking world through the lens of culture; and, Greater integration of participatory and collaborative design methods and practices.

We are now living in a world "of almost infinite complexity, endless possibility, and near constant change" and need curriculum to educate the critical designers needed for these changing times (Thomas and Brown 2010, 15).

Interrogation of these three areas begins to address the need to further develop curriculum that enables design education to become proactive, charting the new territories and possibilities needed in design.

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A DESIGN THINKING APPROACH TO LEARNING BUSINESS ANALYSIS IN BUSINESS INFORMATION SYSTEMS

Sorcha Holohan
Keelin Leahy
Adam DeEyto
University of Limerick. Ireland

ABSTRACT

This paper describes research that points to the potential of design thinking as a catalyst that encourages students' desire to create engaging, desirable experiences for their users whilst simultaneously developing students' critical thinking skills. The development of business information system students' design abilities in a higher education learning environment through the use of design thinking both as a design methodology and as a distinctive pedagogical approach through the subject of business analysis is discussed. An experiential way of learning the subject of business analysis specific to designing information systems and the accompanying development of a student support learning tool is explored. Issues and challenges regarding the integration of this methodology within existing curricula with learning strategies are raised. Case study strategies are described and key findings are illustrated.

KEYWORDS

Design Thinking, Design Education, Information Systems, Business Analysis, Experiential Learning

1. INTRODUCTION

Design thinking has been applied as a methodology for innovation within the context of education and business at a global level. Previous research has pointed to design thinking being defined in an incoherent and contradictory way. A number of theorists have presented descriptions of design thinking. Johansson-Sköldberg et al. (2013) offer eight dissimilar dialogues. These definitions are put forward as the creation of artifacts (Simon 1969), a reflective practice (Schön 1983) and problem-solving activity (Buchanan 1992; Rittel and Webber 1973).

Research studies in the context of information systems recognise the design thinking approach in terms of possibilities to engage in what appears complex and it is viewed as a valuable way to attend to convoluted issues and as an important cyclical process of design (Dolak et al. 2013). In the context of higher education, limited research has been done to augment the integration of design thinking for developing student learning approaches within subject areas that are not perceived as design oriented. The point at issue here is how to merge design thinking within existing curricula. Within the framework of information systems, Pourdehnad et al. (2011) consider the alliance between systems and design thinking.

This study demonstrates students' and faculty perspectives on the influence of design thinking when combined with other methodologies for learning in business information systems. Action research was used as a methodology to assemble evidence of how first year business information system students practice their evolving design thinking abilities within subject areas such as business analysis within their course structure. This research provides clarity around the difficulties of assimilating design thinking within existing curricula in higher education. The study contributes with representations and situations of how integration may be accomplished and presents understanding and perceptions around conditions to succeed.

2. CASE STUDY

This research took place between the years 2012 and 2014 at University College Cork, Ireland. Quantitative data was sourced through prior knowledge and post intervention surveys and also acquired through the use of a survey tool administered following design thinking sessions attended by 140 business information system students. Supporting the quantitative data, qualitative data obtained through interviews with 25 business information system students and faculty members that incorporated course directors and senior lecturers united to create a triangulation approach, ensuring an expansive frame of reference to this research.

2.1 DESIGN THINKING AS AN APPROACH IN BUSINESS INFORMATION SYSTEMS

Design thinking was in this study integrated into a first year business information system students' curriculum as a process and as an approach to learning. Design thinking as a methodology, through one hour per week in the teaching schedule, was adapted to two aspects of the first year course programme. Design thinking was primarily used to facilitate student learning in the development of an MS Access and MS Excel database forming part of a defined project brief, i.e. the development of a web application for a private members tennis club.
The aforesaid student group also used the design thinking methodology in a business analysis learning setting. One project brief was entitled 'Advising financial institutions on meeting the needs of seventeen to twenty-five year olds'. An adapted design education framework was used that centred on a staged way of learning to design and use a process to form new ideas. This framework reflected the principles, practices and methods of design from a higher education design domain. A learning tool that reflected the principles of design was developed and tested with students throughout the research study. In this way design thinking as a methodology and as an experiential way of learning was integrated into existing curricula in a business information systems higher education setting.

As prevalent features of the design thinking methodology were taught throughout student sessions these same design practices required students to be strongly committed to the creation of new ideas. The 'learn by doing' principle of design education was a key feature of student engagement, with tasks framed in a way that was oriented towards an active application of thinking rather than a passive observatory

one. In relation to the assessment of the design thinking part of the students' project deliverables, three representations of their understanding were required; a storyboard, an activity analysis template and persona profiles of end-users reflecting the project brief.
The perspectives of students and faculty including the perceived positive and negative aspects of design thinking are presented and findings are discussed in terms of what conditions are necessary for this learning approach to succeed. Issues arising that require further research are also addressed.

3. CONDITIONS TO SUCCEED

3.1 POSITIONING WITHIN PROGRAMME STRUCTURES

In lieu of locating design thinking as a standalone module within a first year information systems programme structure, this study demonstrates how the methodology was adjoined to projects and programmes already in place within the BIS (Business Information Systems) department. The paradigms, principles and practices of design thinking were delivered using design thinking learning tools that reflected associated project briefs.

Table 1 shows extracts of the perspectives of four first year business information system students of design thinking. The extracts demonstrate the variation between students' views on the concept of design thinking reflecting their experience of the learning intervention. The students' view evidenced from the analysis of interview transcripts was that there were occasions when students used design thinking strategies more for their programming projects situated in the timetable toward the end of the year than for the project around which the design thinking was originally aligned. Student perceptions around the design thinking methodology and how and where they used design thinking for coursework differed (see Table 1).

Perceptions of students of the design thinking methodology	
Student A	*It's just another way of looking at it, makes you step back and look at it, what's the first step, what's to focus on, learn to step back and sketch it out. Design: I used to think it was airy fairy, now I think, now when I see a product, now I know it started way before even a prototype.*
Student B	*It allows me to think a bit more differently about things, I might have just at the start think, one idea only, but design thinking lets me create, have a few alternate ideas, before that, if I got one thing in my head, I would go with that idea, but with design thinking, I might go through a few different ideas that I had.*

Perceptions of students of design thinking relative to various course projects	
Student C	*I think it's very strong in terms of doing projects, when we first started doing it I didn't think it was too practical but now looking back, I think it definitely helped, not even just the MS Access project, but all the projects, websites, programming projects, we spent a good few hours about going into depth, be the users (Design): everyone is individual, you have to be able to design for a person, context, who you are making for, who the user's are.*
Student D	*Design thinking can be used for any problem, any problem that requires a system. It broadened my thinking, I could make more ideas of things design thinking in business analysis, because the topic is broad, design thinking it's useful, I would score it 9/10.*

Table 1 - Students' perceptions of the design thinking methodology and effectiveness for projects

A significant finding that became a condition to succeed was in this case the impact of the positioning and delivery of design thinking as a learning approach adjacent to an existing student project brief. This approach was viewed by stakeholders as a support framework to meet students' learning aims and outcomes. This format for integration thus enabled students to associate design thinking with the aims and objectives of 'real-world' information systems client project scenarios.

3.2 ACKNOWLEDGING STUDENT IDENTITY

The question of whether or to what extent a student had prior experience of design education before entering a business information system programme became a key issue in the success or otherwise of the integration and implementation of the design thinking methodology in this case. An individual's self-concept possibly originates from a perceived association with social groups (Hogg and Vaughan 2002). Accordingly, acknowledging students' prior design experience guided the way toward implementing a new educational strategy in this higher education setting.

Quantitative data drawn from surveying the first year business information systems cohort in this study demonstrated that students primarily considered themselves developers and business analysts. Qualitative data gained from interviews with students evidenced students' perceptions around what they viewed design thinking to be and also their views on what a designer does (see Table 2).

Perceptions of students' views of their own identity	
Student A	*I would say I am half a programmer and half a designer, I wouldn't be exemplary at both or excellent or I would be good at either one.*
Student B	*I do think of myself as a designer as well, I do, I am making out the forms and thinking how, for instance in the project, a user filled out a form, which way do they go to click, to the next button.*
Student C	*I think developer first, analyst second, designer third, engineer, no comment.*
Student D	*I really don't think I have gained an identity through doing the course, I mean it might develop over time.*

Table 2 - Students' perceptions of their own identities

Students in this case study principally viewed themselves as business analysts and developers (see Table 3).

	Designer	Designer / Analyst	Analyst	Developer	Analyst/ Developer	Engineer	Total
Students n = 140	12%	8%	44%	27%	6%	3%	100%

Table 3 - Students' perceptions of their own identities

The acknowledgment of the student identity and being sensitive towards student views on the relevance of design and design thinking became throughout this research not only an important factor in how to approach the introduction of the concept that is design thinking to a student cohort but also established a rationale and condition for success. Reactions by some students to the design thinking activities were in some instances in this case shown to be negative. There were occasions when students exhibited hesitance in taking part in the collaborative stages of the design process, while some students demonstrated signs of discomfort with the fast visualisation of ideas and the formation of prototypes. In order to overcome this and ensure that the students continued to engage with the design thinking process, concepts were accepted in written format for contribution towards a collaborative visual framework. This approach was seen to lessen student diffidence towards these particular strategies associated with design thinking, thus allowing students to continue to learn and form creative concepts.

The design thinking methodology had been pre-tested with a fourth year business information systems student cohort within the same university department. While the learning environment and the reactions to the methodology differed, an adaptive approach to teaching the methodology was required. Evidenced from the qualitative data, a malleable approach to teaching became a primary condition around the degree of success of the integration of design thinking within this course structure. Providing learning conditions and adapting strategies for altering those conditions when required to best benefit students' learning styles became a key driver for improving student learning outcomes.

3. 3 DESIGN THINKING AS AN EXPERIENTIAL WAY TO LEARN

Establishing the potential of design thinking as an approach to learning, cited here in the context of learning business analysis in business information systems, has been a key focus in this study. Analysis of data in this case evidences students' and faculty perceptions around 'learning by doing' as part of an experiential approach to learning. What is perceived to be a more traditional passive approach to teaching and learning is often associated with knowledge transmission in large university lecture halls (Kolb 2001). This study demonstrates views on how students consider the design thinking approach to be advantageous as a way to learn what may be perceived as non-design subjects such as business analysis. A first year business information systems student discusses design thinking as a way to learn:

The way you try to learn it, map it out as a way that would suit you to kind of learn it, learn the methodology and then apply it on your own to something. As a method to get your head around doing the other things for coursework. (Interviewee)

Findings from qualitative data drawn from interviews with faculty members within business information systems demonstrated two clear views on the effectiveness of design thinking as a pedagogical approach. The first stated value is its potential to increase student engagement in learning, whereby students become active participants in their own learning rather than passive observers. One student stated, "I remember it more" (Student E). The second stated value put forward by faculty, a view drawn from analysing student learning outcomes, i.e. storyboard, activity analysis and persona profile, is its effectiveness and capacity to promote and engender empathy for potential end users of products and services.

3.4 THE PROCESS OF COMMUNICATION AND INTEGRATION

Undertaking the integration of a new learning initiative, in this case design thinking as a methodology to learn, depended to a greater or lesser extent on the commitment of individuals within the learning setting. Faculty in this case created clearly defined parameters for expected student project deliverables and learning objectives aligned with explicit criteria for assessment. From the qualitative data, this research evidences two findings in relation to communication between participants within both the integration process and the learning process. Firstly, the successful outcome of integration

was directly linked to the level of detailed forward planning and project outlining that formed the integration strategy. A second finding in relation to conditions for success related to the issue of communication between the design thinking facilitator and the student cohort. The ability of the facilitator to recognise and comprehend the varying degrees of student engagement and change teaching strategies when necessary, especially in the initial phases of integration, were seen to increase participant engagement and maintain motivation.
Finally, the selection of faculty members who supported the introduction of a new learning initiative was found to be an additional fundamental condition to succeed. Evidence drawn from both the qualitative and quantitative data in this case pointed to the concept that the student profile, particularly in relation to the acceptance of certain design thinking strategies as being relevant and effective for project work, differed between cohorts within the department.

4. CONCLUSION

This paper reveals a practicable application of design thinking as an approach to learn in addition to its potential as a strategy to engage students to create innovative and appealing products and services for their end users. The integration of design thinking within existing curricula in a business information systems higher education environment indicated signs that the approach has the potential to develop students' cognitive skills. The view of stakeholders is that the approach is a valuable way to drive student engagement through experiential learning methods. However, there were also negative reactions to the methodology displayed by students. While design thinking may be a way to learn, a key finding of this research is that students themselves indicate the requirement for an attached relevance of topic and associated course content and structure that reflects practice in industry. As demonstrated in this case, the concept of andragogy means that there is a requirement for adult student learning objectives to be immediately relevant (Knowles 1984). As evidenced from the research data, the results of integrating design thinking as a methodology to create engaging and innovative experiences for end users in business information systems are promising. However, it is in this case the demonstration of how the design thinking approach was used as a way for students to learn business analysis and the subsequent impact on learning other subjects within the course structure that may lead to significant future research.

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A FAIT ACCOMPLI? DESIGN ACTIVISM AND BRAND IN DESIGN EDUCATION

Brian DeLevie
University of Colorado Denver. United States

ABSTRACT

What is design activism? Simply put, it is a designer, regardless of discipline, who is a "design-citizen" of the 21st century. It is an individual who uses professional practice to be more then competitive, corporate, and exploitative and uses the skills afforded by their professions to be inclusive, powerful and cooperative. A brand, resides within the hearts and minds of customers, clients, and prospects. It is the sum total of their experiences and perceptions, their passions and real, or imagined personal archetypes. Both are in the business of manufacturing desire. "Sustainability is an emerging mega-trend" (Harvard Business Review, 2010) as such, it has become fashionable to be 'sustainable' for producers and consumers. "Industries have latched onto this emerging mega-trend and have morphed it into a marketing tool, effectively using 'sustainability' as a hook for the increasingly eco-aware post-modern consumer." (Latoya Voogt, 2012). As companies strive to weave eco/sustainability with branding to create, build and foster desire in the consumers it presents a moral dilemma and an interesting question for both design students and design education as a whole. Marketing and branding, are often criticized for being a primary cause of the very overproduction that promotes unsustainability. Marketing is pictured as a tool to brainwash consumers and so having a negative effect both on society and the individual (Kilbourne, McDonagh and Prothero, 1997). It is often diametrically opposed to the very concept of sustainability, as it exists mostly to create artificial wants among consumers.

However, according to the inaugural BBMG Conscious Consumer Report, nearly nine in ten Americans say the words "conscious consumer" describe them well and are more likely to buy from companies that manufacture energy efficient products (90%), promote health and safety benefits (88%), support fair labor and trade practices (87%) and commit to environmentally-friendly practices (87%), if products are of equal quality and price. (BBMG Conscious Consumer Repo, 2011) Through their techo-savy exteriors Design Students often give the appearance of being well versed in how to creatively express themselves through media. Via social media students display a virtuosity that allows them to utilize their personal and cultural ideologies to create a new kinds of public media - accessible, participatory and inclusive. They are accustomed to creating and fostering personal brands that function as personal and public spectacle. Debord, when speaking of the spectacle, made it clear that "in societies where modern conditions of production prevail, all of life presents itself as an immense accumulation of spectacles. Everything that was directly lived has moved away into a representation" (Debord, 1967). The very function of branding is to create a flâneur out of every potential consumer and the wave of sustainability creates an avenue that "aims at nothing other than itself. … It is the true reflection of the production of things, and the false objectification of the producers" (Ibid). Thus both design activism and branding suffer from and speak to the same challenge – "a clever and deceptive guise of 'pseudo-empowerment" (Latoya Voogt, 2012). Design education is a broad arena of activity with a rich history, developed theory, and passionate practitioners. It encompasses a myriad of techniques, tools, philosophies, theories and craft. At least in part, design can be seen as an approach to solving problems and in that guise has several fundamental qualities – as a practice and as a mind-set – that make it effective in the face of complicated issues. Using Design Activism as a central tenet empowers, directs and engages students on a level well beyond themselves and their "connected" lives. It encompasses a wide range of real-life, business, social and environmental engaged actions. Additionally, it includes processes that innovate forms of creative practice, providing branding models by which designers might work, or challenge existing conventions of research, cultural views or public or private policy Through examining the systemic underpinnings of brand, design activism and education this paper asks can design truly educate students in ways to have a successful politicized practice that encompasses a wide range of real-life, business, social and environmental engaged actions? Is it hypocritical to pursue design activism in a capitalist society? Does such an approach set up non-realistic aspirations in design students? Does design education create a fait accompli where "the means" creates an outcome that ultimately destroys "the ends"?

KEYWORDS

Design, Activism, Society, Branding, Education, Desire

ATTACHMENT

ANEXO

COMMITTEES

Scientific Coordination
Francisco Paiva
Universidade da Beira Interior PT

Scientific Committee

Aidan Rowe
University of Alberta, CA
Alastair Fuad-Luke
Aalto University, Helsinki FI
Alexandra Cruchinho
Instituto Politécnico de Castelo Branco PT
Ana Leonor Madeira Rodrigues
FA Universidade de Lisboa PT
Anabela Gradim
FAL Universidade da Beira Interior PT
Anna Calvera
FBA Universitat de Barcelona ES
António Delgado
ESAD Instituto Politécnico de Leiria PT
Cristina Azevedo Tavares
FBA Universidade de Lisboa PT
Catarina Moura
FAL Universidade da Beira Interior PT
Carmen Bellido Márquez
FBA Universidad de Granada ES
Denis Alves Coelho
FE Universidade da Beira Interior PT
Elena González Miranda
FBA Universidad del País Vasco ES
Emílio Távora Vilar
FBA Universidade de Lisboa PT
Fátima Caiado
FAL Universidade da Beira Interior PT
Francisco Paiva
Universidade da Beira Interior PT
Heitor Alvelos
FBA Universidade do Porto PT
Helena Barbosa
DCA Universidade de Aveiro PT
Hélène Saule-Sorbé
FBA Université Bordeaux3 FR
Inmaculada Jiménez
FBA Universidad del País Vasco ES
Jacek Krenz
FE Universidade da Beira Interior / UTGdansk PL
João Paulo Queiroz
FBA Universidade de Lisboa PT
João Sousa Cardoso
Universidade Lusófona do Porto PT
Joaquim M. Paulo Serra
FAL Universidade da Beira Interior PT
Jorge dos Reis
FBA Universidade de Lisboa PT
José Bragança de Miranda
Universidade Nova de Lisboa PT
Josu Rekalde Izagirre
FBA Universidad Del País Vasco/EHU ES
Madalena Rocha Pereira
Universidade da Beira Interior PT
Maria da Graça Guedes
Universidade do Minho PT
Mário Bismarck
FBA Universidade do Porto PT
Paulo Freire Almeida
EA Universidade do Minho PT
Paulo Luís Almeida
FBA Universidade do Porto PT
Raul Cunca
FBA Universidade de Lisboa PT
Rita Salvado
FE Universidade da Beira Interior PT
Rui Miguel
FE Universidade da Beira Interior PT
Sheila Pontis
UCL University College London UK
Teresa Franqueira
DCA Universidade de Aveiro PT
Urbano Sidoncha
FAL Universidade da Beira Interior PT

Referees

Aidan Rowe
Anabela Gradim
António Delgado
Alexandra Cruchinho
Carmen Bellido
Catarina Moura
Denis Coelho
Elena González Miranda
Emílio Vilar
Francisco Paiva
Heitor Alvelos
Helena Barbosa
Inmaculada Jiménez
Jacek Krenz
Joaquim Paulo Serra
Jorge dos Reis
Paulo Freire Almeida
Sheila Pontis
Teresa Franqueira
Urbano Sidoncha

Anexo / Attachment

CALL FOR PAPERS

The organizing committee of DESIGNA welcomes the submission of original communication proposals with a seminal propensity under the generic theme 'Desire', to frame within the following sessions:

1. Communication
2. Multimedia
3. Product
4. Fashion
5. Theory
6. Education

Abstract (.rtf, .doc or .odt)
The proposals, to a maximum of 1000 words, written in Portuguese, English or Spanish, should include title, subject and its relevance, hypothesis or question that the author(s) wish to explore, conceptual framework and methodology, expected results and up to 5 keywords.

Submission
The abstract must be submitted electronically through the submissions platform at DESIGNA's website, which will assign it an identification code in order to guarantee anonimity when distributed to two peer reviewers.

Arbitration criteria
The scientific committee will decline all proposals that aren't able to demonstrate relevance, originality and adequacy to the the theme and purpose of the conference.

Publishing of the Proceedings / Full paper
The full version of the paper corresponding to the oral presentation must be sent to the Organizing Committee until September 30th, 2014. The disregard for this deadline will result on the exclusion from the conference's published proceedings. The paper must be sent by e-mail to designa.na.ubi@gmail.com

Poster
The proposals that are not selected to integrate the thematic sessions as oral communications, but nonetheless meet the stated arbitration criteria, will be given the oportunity to enter the conference's program as posters.

Working languages
Portuguese, English and Spanish.

Notes
1. The call for papers deadline will not be extended.
2. The proceedings publication in paper or electronic format does not suppose any additional costs to the conference's registration fee.
3. The submission of the full paper implies a tacit transfer of the publication copyrights to University of Beira Interior.
4. Obtaining permission to publish the included images is a responsibility entailed to the authors.

STANDARDS

1. Abstract
The extended abstract of the communication proposals, to a maximum of 1000 words, written in Portuguese, English or Spanish, must include title, theme and its relevance, hypothesis or question to be explored, conceptual and methodological frame, predicted results, references and five keywords. The abstract must be submitted electronically, until May 31st 2014, through the submission platform present at DESIGNA's website (www.designa.ubi.pt), which will automatically assign it an ID code that allows its distribution to two scientific reviewers while ensuring the author's anonymity.

2. Full paper
Once the abstract is accepted, the full paper corresponding to the intended oral communication and to be published in the conference's proceedings, must be sent to the organizing committee until September 30th 2014, through the e-mail designa.na.ubi@gmail.com, following the procedures stated below:
2.1 Text – one single text file, identified with the submission ID, saved in .rtf, .doc or .odt (.pdf is not acceptable) with minimal formatting and structured as follows:
- Submission ID / Registration number;
- Title of the article;
- Name of the author(s);
- Category;
- Institution;
- Identification of the panel;
- Abstract (in English; up to 1.000 characters);
- Keywords (max. 5);
- Full paper (up to 2.500 words), in Portuguese, English or Spanish;
- Any note must be listed at the end of the document and will be counted within the character's limit;
- Image caption, indicating source/credits, must come at the end of the document or be placed where intended.

2.2 Images
Images (.jpg, .png, .tiff, .ai or .pdf) must be sent in separate files (max. 8) and identified with the same prefix of the text (the submission ID) and corresponding number, following the example: ID23-01.jpg,...

3. Oral communication
The oral communication must be prepared to a 15-minute presentation at the conference (November 20th and 21st), in Portuguese or English. Any complementary visual/graphic presentation (e.g. PowerPoint) must be in English. It can be sent previously to the Organizing Committee (until November 18th) or delivered 5 minutes earlier to the beginning of the panel in a pen drive.

4. Poster
Posters will be exhibited in digital format (6 .jpg images / 6 slides, 30 seconds each), in a room adjacent to the conference (Sala dos Arcos). The material intended for presentation must be sent to the organizing committee until November 10th, to designa.na.ubi@gmail.com

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NOTE - The paper's publishing, both in printed and in electronic version, is granted through the payment of the registration fee and will not imply any extra costs. The sending of these elements presupposes the tacit share of all the publishing rights with the University of Beira Interior; to all effects, the authors maintain intellectual property. The permission to publish the images is accountable to the author(s).

CONTACTS

General
designa.na.ubi@gmail.com

Executive Committee
Francisco Paiva . fpaiva@ubi.pt
Catarina Moura . catarinamoura@gmail.com

Conference Secretary
Mércia Pires +351 275242023 / ext. 1201

UNIVERSITY OF BEIRA INTERIOR
Faculty of Arts e Letters
Departament of Communication and Arts

LABCOM - Online Communication Lab
Rua Marquês D'Ávila e Bolama
6200-001 Covilhã - Portugal

DESIGNA 2011

A ESPERANÇA PROJECTUAL
THE PROJECTUAL HOPE
PROCEEDINGS

UBI

FRANCISCO PAIVA
CATARINA MOURA (Orgs.)

PRESENTATION

ABSTRACT

Annual investigation conference on Design which adopts the theme from Tomás Maldonado's classical essay The Projectual Hope, aiming to reflect about the performance of creativity in times of crisis. The event counts with a set of invited guests, together with the presentation of communications selected from a blind call for papers and destined to publication.

PRESENTATION

The opportunity to reflect on the wide range of conceptual and operational problems placed by Design, considered as a project or as a product that accentuates the dialectics of the concrete, has been wasted. It is the conscience of this fault that generates the will to provide some systematization to the reflection, generating routines able to supply the sense of community of practice and to give visibility to this disciplinary corpus, both in itself and in its several specialized branches, from art to communication and industry.

Many of the themes discussed both by designers and culture critics and thinkers gravitate around the improvement of life conditions and of the aesthetical and economical value of the products, being them tangible or immaterial. This means the world of Design is intimately connected to society's concrete problems, although it is often taken as superfluous, mostly within the environments most resistant to the incorporation of projectual dynamics, or incapable of allocating creativity to certain ends.

The Projectual Hope (1970) came precisely to alert to the several dimensions of Design which, by their ethical, speculative and economical nature, besides the traditional technical and aesthetical dimensions, or even artistic, may place it in the joint between environment and society, where Utopia easily emerges.

In the field of Design, the phenomenological function appears connected to the semiotic one – the capacity to create joins the capacity to see -, whose dynamics influence the acquisition of analytical capacity about the interaction between the material and the human environment. In the consumption societies, Design also appears between politics and individuals, because of its intrinsic capacity of shaping desire or, in other words, of rationalizing the need and acculturate pleasure. Thus, being the government of things directly connected to the government of individuals, it's easier to understand not only the ambition of some artists to lead the "revolution" but also the appetite for power to "regulate" art.

Both in its visual and material side, nowadays Design deals with the apocalyptic forecasts resulting from the overproduction, the drain of resources and the increase of residues, worsened by the rapid obsolescence of goods, the necessary optimization of work and collateral energetic savings, incorporating the need to reach all audiences, including those less favoured. But if these problems accentuate the designer's social responsibility, they also have contributed to the development of innovation strategies capable of achieving balances and providing answers that legitimate the progressive de-materialization, the rationalization of consumption or even the established economic order. Most of the human landscape is inexorably determined by Design.

Through Design, cities became objects and facts of communication, as well as products. The image of cities exposes the confrontation between signs and brand systems which arouse semiotic interpretations simultaneously able to contextualize and challenge the most common artistic ideology and will. This sort of popular art accentuated the demands of legibility and effectiveness. Being able to provoke and assault, it allows the actualization of codes and formal repertoires, increasing the complexity of communication processes.

The projectual praxis reveals that the overcoming of the stereotype elapses from the critical conscience before the designers's operational and existential field: the creation of reality. Reality which has been changing at considerable pace through the imposition of new media connected to the performative arts as much as to the production and communication media, and whose interfaces don't cease to reconfigure everyday experience.

Within this frame, this conference aims to answer two crucial questions. The first is to know if the field of Design (graphic, visual, multimedia, industrial or fashion) presents a common disciplinary or academic scope, bringing together a set of inter and transdisciplinary perspectives, allowing to continue to think Design in a broad sense.

The second is to understand how may Design contribute to unblock transversal dead-locks to several fields of contemporary society, being them cultural, social or economical.

In this sense, we intend to congregate a mosaic of contributions directly derived from investigation not only in the fields of Design as well as its theory and technology, but also from aesthetics, semiotics, anthropology, sociology and culture in general. Therefore, all those interested in these matters are invited to present proposals within the following thematic panels: 1. Communication; 2. Product; 3. Theory; and 4. Fashion.

University of Beira Interior currently offers six degrees in Design, between 1st and 2nd cycles. It gathers excellent conditions to the development of reflection habits focused on their different domains. Through DESIGNA, it aims to open to the routine of mingling actors of ideas, aware that the dissemination of concepts is encouraged by collaborative and network efforts and that it very much depends on the convergence need and on the encounter of investigators in such fora.

Portugal needs Design! - Society as a whole profits directly from creative investment, and the survival of industry nowadays depends on the capacity to innovate on products and services. The formation of designers favours social well-being directly, answering to concrete problems and, indirectly, through the creation of value that reflects on the increase of competition.

Together with the scientific component, the conference DESIGNA 2011 looks precisely to raise awareness to the fact that the investment on talent may be seen as a factor of improvement on life quality and even an answer to the notorious crisis.

Anexo / Attachment

PROGRAMME

25 NOVEMBRO Sexta-feira

9:00 - Recepção e Registo (Sala dos arcos, antiga biblioteca, Pátio da Parada da UBI)

9:30 - Sessão de Abertura / Comissão de Honra (Auditório da Parada)
João Queiroz (Reitor da UBI)
Joaquim Paulo Serra (Presidente da Faculdade de Artes e Letras)
António Fidalgo (Director do LabCom)
Catarina Moura (Comissão Executiva da DESIGNA)
Henrique Cayatte (Presidente do Centro Português de Design)
Nuno Sá Leal (Presidente da Associação Portuguesa de Designers)

10:30- Que Esperança Projectual? Francisco Paiva, UBI, Comissão Executiva da DESIGNA

11:00- ImÁudio_1a Vídeo multimédia, Helder Gonçalves, Mário Carvalho

11:15 - The Role of Design: Yesterday and Today. Sheila Pontis, London, University of the Arts

14:00 - Livros de Provas. Jorge dos Reis, Faculdade de Belas Artes da Universidade de Lisboa

14:30 - **Painel 1 COMUNICAÇÃO**
Moderação: Sara Velez | Afonso Borges | David Gorjão

8. Os Media Participativos e a importância do Cidadão e da Instituição enquanto Marcas mobilizadoras na área da Oncologia.
Nuno Duarte Martins, Instituto Politécnico do Cávado e Ave, ID+. Heitor Alvelos, ID+, Universidade do Porto, INESC Porto. Daniel Brandão, Instituto Politécnico do Cávado e Ave, ID+, Universidade do Porto

10.Comunidades Criativas Online: Uma análise das Interações Entre os Produtores e Consumidores de Criações Digitais.
Pedro Amado, Ana Veloso, Departamento de Comunicação e Arte da Universidade de Aveiro.

18.Rotinas produtivas em Design de informação.
Cláudio Gabriel Ferreira, IPCA - LIPP . UBI – Labcom

28.Transmediation and Communication Design Practice.
Paulo Baudouin, Faculdade de Belas Artes da Universidade de Lisboa

44.Design de Ações Culturais Participativas: um Caso de Estudo no Centro Histórico da Cidade do Porto.
Daniel Brandão, ID+ / Universidade do Porto / Instituto Politécnico do Cávado e do Ave. Heitor Alvelos, ID+ / Universidade do Porto / INESC Porto. Nuno Martins, Instituto Politécnico do Cávado e Ave, ID+, Universidade do Porto.

48.Design in the making: um olhar interpretativo da prática em design de comunicação.
Leonel Brites, Faculdade de Belas-Artes Universidade Lisboa.

52.Os processos de significação do livro num contexto de edição híbrida.
Ana Catarina Silva, LIPP_Laboratório de Imagem, Produção e Percepção, IPCA

54.Contributo para um Museu do Web Design Português: Preservar o projecto e o objecto imaterial.
Sandra Antunes, Universidade de Aveiro, ID+. Vasco Branco, Universidade de Aveiro, ID+.

58.Ilustração, breve reflexão sobre uma possível definição.
Marta Madureira, IPCA.

71.O impacto comunicativo da marca: apresentação de uma metodologia de avaliação da marca.
Álvaro Sousa, Universidade de Aveiro.

16:30- ***"Culpas, rezos y sacrilégios" (Museu de Lanifícios). Performance alusiva ao Dia Internacional para a Eliminação da Violência contra as Mulheres.***
Inma Jiménez, Universidad del Pais Vasco

17:00 - Painel 2 TEORIA
Moderação: Fátima Caiado | Urbano Sidoncha

11.Design e pensamento lateral no ensino, para o estímulo da criatividade.
Liliana Reis de Jesus, Departamento de Educação, Universidade de Aveiro; Escola EB 2,3 Florbela Espanca, Esmoriz. Rosa Maria Oliveira, Departamento de Comunicação e Arte, Universidade de Aveiro; ID+ (Instituto de Investigação em Design, Média e Cultura, www.idmais.org. Isabel Amorim, Escola EB 2,3 Florbela Espanca, Esmoriz.

16.Design research in academic context.
Maria João Félix, EST/IPCA.

17.Drawing and project: tradition and innovation.The place of drawing in the project methodology.
Maria João Félix, Pedro Teixeira, EST/IPCA.

19.A alma dos objectos.
Manuel Albino, IPCA - LIPP. U. Minho. Paulo Simões, IPCA. U.Minho. Cláudio Ferreira, IPCA - LIPP. UBI – Labcom.

23.The fine arts, an important contribution for the design studies.
Maria Figueiredo, IADE- Creative University, Lisboa.

25.assignatures conceptuales: herramientas para proyectar.
Antoni Mañach, ESCOLA SUPERIOR DE DISSENY – ESDI.

29.A Campanha do Bom Gôsto ou Análise de uma Tentativa de Doutrina Estética num País Autoritário.
Carlos Bártolo, Univ. Lusíada de Lisboa e Instituto de História de Arte da FCSH/UNL.

30.Objectos de in-formação. Notas para uma discussão fenomenológica do design de comunicação.
Sara Velez Estêvão, FAL-Universidade da Beira Interior.

55. O Desafio do Design.
Pedro Cortesão Monteiro, CIAULD — Faculdade de Arquitectura da UTL / Universidade Lusíada, Lisboa

19:00
Conclusões

26 NOVEMBRO– Sábado

10:00 - ***Design Inclusivo***
Renato Bispo, ESAD CR / Universidade de Aveiro

10:30 - ***Proyectar cuando la incertidumbre aumenta***
Inma Jiménez, Universidad del Pais Vasco

11:15- Painel 3 PRODUTO
Moderação: Denis Coelho | Cláudia Teixeira

1. Perspectivas de Integração no Mercado de Trabalho dos Designers Industriais.
Denis Coelho, Universidade da Beira Interior.

9. SHARP: Colaboração e Desenvolvimento Parametrizável de Type Design.
Pedro Amado, Departamento de Comunicação e Arte da Universidade de Aveiro. Ana Veloso, Departamento de Comunicação e Arte da Universidade de Aveiro.

15. Contributos para o estudo da forma: desenvolvimento de um modelo computacional aplicado à cadeira.
Sara Garcia, Luís Romão. Faculdade de Arquitectura da UTL.

27. O método da biónica num projecto de design técnico.
Stefan Rosendahl, CICANT. Universidade Lusófona de Humanidades e Tecnologias. Alcina Pato, ESATI - Universidade Lusófona de Humanidades e Tecnologias. Vasile Ros, ESATI - Universidade Lusófona de Humanidades e Tecnologias. Marta Gonçalves, ISEDEC - UAlg.

31. Design de um boné com detector eletrônico de obstáculos para uso por deficientes visuais.
Nicea Nascimento, UBI. Rita Salvado, UBI. Francisco Borges, IFPB.
47. Novo normal.
Afonso Borges, UBI.

53. Design Automóvel Português - utopia ou solução?.
Paulo Dinis, Fernando Moreira da Silva, CIAUD - Faculdade de Arquitectura da UTL.

61. O design de ourivesaria e joalharia em portugal no século xxi.
Cláudia Pedro Isidoro dos Santos Teixeira, UBI - Universidade da Beira Interior.

64. Novos territórios do design de produtos.
Ricardo Cabral, Liliana Soares e Aparo, Ermanno Aparo - IPVC-ESTG.

14:30 - ***Moda, ambiente, progetto. Una riflessione per il fashion design responsabile.***
Giovanni Conti, Politecnico di Milano

15:00 - **Painel 4 MODA**
Moderação: Rui Miguel | Rita Salvado

13. Desfile de Moda, Espectáculo de Arte e Design.
Ana Luiza Olivete, Universidade da Beira Interior.

24. Tailoring a future in which clothes grows from bacteria.
Marta Andreia Varela Ferraz, Isabel C. Gouveia Universidade da Beira Interior.

45. Vestuário inteligente e tecnológico em portugal: Análise das Necessidades do Mercado Português.
Gianni Montagna, Cristina Carvalho - Faculdade de Arquitectura da Universidade Técnica de Lisboa. Hélder Carvalho, Escola de Engenharia da Universidade do Minho.

51. Vale do Ave – Tecer Outras Coisas.
Andreana Buest, Escola Artística e Profissional Árvore.

63. O «CorporativeWear» como proposta de Valorização dos Resíduos Têxteis enquanto agente de ReDesign de uma marca de vestuário Street-Wear.
Carla Morais, Cristina Carvalho - Faculdade de Arquitectura da Universidade Técnica de Lisboa. Cristina Broega, Faculdade de Engenharia da Universidade do Minho.

67. A Indústria Criativa da Moda e o Design Português.
Alexandra Cabral, Designer / Investigadora de moda

70. Cultura de moda, Identidades e envelhecimentos do corpo revestido.
Geni Santos, Universidade de Aveiro.

78. Vestuário inteligente como uma extensão estética e funcional do corpo.
Isabel Trindade, Madalena Pereira, José Lucas, Manuel Santos Silva, Rui Miguel - Universidade da Beira Interior.

81.Valor percebido pelo consumidor e atributos para projetar o visual merchandising de marcas de Moda para E-commerce.
Paulo Martins, Madalena Pereira, Susana Azevedo e Rui Miguel, Universidade da Beira Interior

83. Criatividade e Sustentabilidade no Ensino Superior. Novos Modelos de Ensino/Aprendizagem em Design de Moda no Ensino Superior
Elsa Lima, Universidade da Beira Interior.

17:30 - Conclusões

18:00 - ***T-JAYS® Holographic Concert. Live Concert with 3D Virtual Band.***
Rudolfo Quintas

INVITED SPEAKERS

Que Esperança Projectual?
Francisco Paiva

Fashion And Enviroment. A Reflection For Responsible Fashion Design
Giovanni Maria Conti

Proyectar Cuando La Incertidumbre Aumenta
Inmaculada Jiménez Huertas

Tipografia Curativa: Uma Esperança Constante No Combate À Iliteracia Pela Força Do Projecto Tipográfico
Jorge dos Reis

The Role Of Design: Yesterday And Today
Sheila Pontis

CALENDAR

20/10 - Submissão do resumo / abstract
11/11 - Notificação de aceitação
11/11 - Divulgação do programa final
25-26/11 - Conferência

DESIGNA 2012

IN/SUSTENTABILIDADE
UN/SUSTAINABILITY

PROCEEDINGS

UBI

FRANCISCO PAIVA
CATARINA MOURA (Orgs.)

PRESENTATION

Sustainability brings us echoes, arriving from the most diverse sources, from a contemporary speech centered in the desirable evolution of a simultaneously political, economical, environmental and, of course, cultural conscience regarding the impact of man's changing presence and action in the world. Therefore, the concept emerges in association with an increasing insistence on practices that define – and are defined by – design.

To think design from sustainability, DESIGNA's second edition theme, contemplates the need to reflect on design's role and responsibility in a complex system dictated by the tensions of a liberal economy built over hegemonic-predisposed production and communication mechanisms, formatted to a worldwide scale throughout the last decades. The complexity of this system reflects the itinerary of an industrial and technological society towards a world apparently ruled by information, reflecting not only the course of design itself, but also its leadership in the definition of production and consumption logics set upon a philosophy of project whose ambition easily abandons the object's confined universe (in its most distinctive configurations) to set foot in the creation of the total environment that frames it.

Even if the market's expansion demands the industry and therefore design to, together with the satisfaction of consumer's needs, diversify forms and explore the superfluous in order to create an economic value that will end up generating a culture of dissatisfaction and squander, nonetheless last decades have been promoting a speech increasingly defined by rationalization and resource management strategies. As a result, designers are confronted with a new challenged, outlined by optimization and concession, within which they are led to think themselves as a sort of social programmers, trying to articulate ecological logics and practices able to redefine production from a new table of principles – such as recycling, non pollution, durability, efficiency, maximum advantage and minimum impact – and, consequently, (re)establishing the balance among the market's needs, production's possibilities, consumer's satisfaction and the environment.

Therefore, it's not difficult to apprehend the uneasiness and apprehension that come with considering the role of design in a society still abounding of an euphoric, misguided and naïf belief in the unstoppable character of technological progress, so many times defined by mere entertainment. DESIGNA 2012 would thus like to contribute to criticize that role, pointing the cultural debate to the project's teleology and leading the scientific community, once again, to a joint reflection about the possibility (or impossibility) or a "nicer, more humane, domestic, habitable, tolerant and pleasant" design that reflects a sort of collective intelligentsia, as established by Medelín's Maniphesto (+), in 2002.

After our first edition's excellent results, it's with great expectations that DESIGNA's organizing team look forward to the contribution of all those wishing to think about the dichotomist un/sustainability. Let's all gather November 22 and 23 at the University of Beira Interior.

PROGRAMME

22 NOVEMBER - Thursday
(Auditório da Parada, UBI)

9:00 - Reception and registration

10:00 - Welcoming Session
João Queiroz
Reitor da UBI / Rector
Joaquim Paulo Serra
Presidente da Faculdade de Artes e Letras
António Fidalgo
Director do LabCom
Francisco Paiva
Comissão Executiva da Designa

10:40 - ***O bom design.***
Catarina Moura, Comissão Executiva

11:15 - KEYNOTE SPEAKER
Re-defining and re-designing our commons as an act of hope
Alastair Fuad-Luke, Aalto University, Helsínquia

14:00 - Panel 1 - THEORY
Moderador / Facilitator: Sara Velez

(ID.92) A (in)sustentabilidade do trabalho criativo em design.
Pedro Quintela. Faculdade Economia da Universidade de Coimbra. Portugal.

(ID.94) Sustainability and gender bias on TV ads.
Joao Paulo Queiroz - Universidade de Lisboa, Faculdade de Belas-Artes. Portugal

(ID.112) Biomímesis e innovación. Un nuevo paradigma para el diseño sustentable.
Rosita De Lisi - Escuela Universitaria Centro de Diseño. Fac. de Arquitectura. Udela. Uruguay

(ID.115) Tradição versus indústria: um Design inclusivo para paìses emergentes.
Júlio Londrim Baptista - Universidade da Beira Interior /LabCom. Portugal

(ID.117) Hacia una "historia sustentable" del diseño.
Andrea Gergich - Fac. Arquitectura, Diseño y Urbanismo. Univ. Buenos Aires. Argentina

(ID.120) La invasión de las pantallas.
Arturo Cancio Ferruz - UPV/EHU. Spain

(ID.133) Arte Pública e Design urbano: confluências teóricas.
Antonio Delgado - ESAD- IPL/ CIEBA. Portugal

16:15 - Panel 2 - EDUCATION
Moderador / Facilitator: Fátima Caiado

(ID.89) Education on Design for Sustainability: Focus vs. Fragmentation.
Carlos Fiorentino - University of Alberta. Canada

(ID.91) Prática Projetual do Design como Ferramenta para Fomentar a Literacia Visual.
Marta Borges - Faculdade de Belas Artes da Universidade do Porto. Portugal

(ID.103) A insustentável leveza da razão: uma lição da Bauhaus.
Andrea Monteiro Vicente; Miguel Santiago - Univ. da Beira Interior, Dep. de Arquitectura. Portugal

(ID.109) Sustentabilidade e Ensino Superior em Design de Moda - Análise de estratégias e iniciativas locais.
Elsa Lima; Rita Salvado - Universidade da Beira Interior. Portugal

(ID.113) A Metodologia Projetual In/Sustentável.
Francesco Pignatelli - Universidade da Beira Interior. Portugal

(ID.122) Design humano: para uma pedagogia relacional em design como escultora social.
André Campos - Univ. do Porto, Fac. de Psicologia e Ciências da Educação / Instituto Multimédia. Portugal

18:00 - **ROUND TABLE on Design Education**
Moderador / Facilitator: Francisco Paiva, UBI
with
Alexandra Cruchinho, ESART, ID+
Victor Almeida, FBA UL
Denis Coelho, UBI
Rita Salvado, UBI

23 NOVEMBER - Friday - Auditório da Parada, UBI

09:00 - Opening and registration

09:30 - Panel 3 - PRODUCT
Moderador / Facilitator: Cláudia Teixeira

(ID.90) Desenvolvimento de um produto infantil com funcionalidades acrescidas: o body dry baby.
Ana Luiza Olivete, Maria José Geraldes - Universidade da Beira Interior. Portugal

(ID.93) Identificação, quantificação e classificação dos requisitos para produtos wearables de protecção física e assistência activa na população sénior.
Miguel Terroso - Instituto Politécnico do Cávado e do Ave, Portugal. António Torres Marques - Univ. do Porto, Faculdade de Engenharia, Portugal. Ricardo Simıes - Instituto de Polímeros e Compósitos, Universidade do Minho. Portugal

(ID.98) O design de jóias e a cultura do lugar.
Suzana Alves - Instituto Politécnico de Viana do Castelo, Portugal. Ermanno Aparo - IPVC / CIAUD, FAUTL. Liliana Soares - IPVC / Instituto de Investigação em Design, Media e Cultura, UA. Portugal

(ID.99) Análise mecânica e propriedades termofisiológicas de compósitos vegetais para moda sustentável.
Edilaine Garcia; Maria José Oliveira Geraldes; Lucas Mendes - Univ. da Beira Interior

(ID.101) Developing a Qualitative Sustainable Design Toolkit.
José Vicente - Escola Superior Gallaecia, Portugal. Rui Frazão - Laboratório Nacional de Energia e Geologia, Portugal

(ID.105) Invention and Product Designing with the Crowd : New Frontiers in Product Development.
Fátima Lanhoso Vieira, Denis Coelho - Univ. da Beira Interior. Portugal

(ID.119) A Biónica - Um caminho para a sustentabilidade.
Stefan Rosendahl - Universidade Lusófona de Humanidades e Tecnologias, Portugal. Palmira Marques; Sílvia Rodrigues; Norberto Guilherme - Instituto Superior Dom Dinis

(ID.131) Corticeira Amorim : um exemplo de design e sustentabilidade em Portugal.
Cláudia Pedro Isidoro dos Santos Teixeira - Univ. da Beira Interior. Portugal

(ID.132) Generación de los requerimientos de un producto mediante la aplicación de la sistémica y criterios de sostenibilidad.
Julio Cesar Rivera Pedroza; Bernabé Hernandis Ortuño - Un.Politécnica de Valencia ETSID, Spain

11:30 - Panel 4: FASHION
Moderador / Facilitator: Rui Miguel

(ID.84) Designer-customer relationships: what role do they play in contemporary Australian textile design?
Emma Lynas - RMIT.Australia

(ID.102) Sustentabilidade na moda com tradição.
Ana Margarida Pires Fernandes - Escola Superior de Artes Aplicadas, IPCB. Portugal

(ID.106) Design de Moda para a Sustentabilidade. Da obsolência para a durabilidade dos produtos.
Elsa Lima - Univ. da Beira Interior. Portugal

(ID.108) Mozambique's capulana: an et(n)hical approach for Sustainable Fashion Design.
Sofia Vilarinho - Faculdade de Arquitectura, Univ. de Lisboa. Portugal

(ID.129) Antenas têxteis integradas em vestuário para recolha de energia ambiente.
Caroline Loss; Luisa Rita Brites Sanches Salvado - Univ. da Beira Interior, Pedro Pinho - Universidade de Aveiro. Portugal

(ID.134) Sustentabilidade no design de acessórios de moda: o papel da modularidade e da integração de tecnologia no aumento do ciclo de vida.
Liliana Ribeiro; Rui Miguel; Madalena Pereira; Isabel Trindade; José Lucas - Univ. da Beira Interior. Portugal

14:30 - Panel 5 - COMMMUNICATION AND MULTIMEDIA
Moderador / Facilitator: Catarina Moura

(ID.100) Gestão de design e sustentabilidade: estudo de caso em livros digitais.
Thomás Cavalcanti; Liliane Chaves - Universidade Federal Fluminense. Brazil

(ID.114) In/Sustentabilidade - A Sustentabilidade Inclusiva no Marketing Contemporâneo.
João Bernardo Beirão Rendeiro - BRA&D. Portugal

(ID.123) Design e bem estar. Campanhas de prevenção da obesidade e promoção de estilos de vida saudáveis em crianças e a adolescentes e a sustentabilidade social.
Sílvia Soares, Madalena Pereira, Isabel Trindade- Univ. da Beira Interior, Rui Mendonça - Faculdade de Belas Artes, Univ. do Porto

(ID.126) Ver e Compreender - Um estudo visual dos suportes de comunicação com vista à promoção da compreensão da informação médica.
Mónica Santos; Susana Barreto - Faculdade de Belas Artes, Univ. do Porto, Katja Tschimmel - Escola Superior de Arte e Design. Portugal

(ID.135) Design e Comunicação, a construção de obstáculos mutáveis.
João Barata; Rui Miguel - Univ. da Beira Interior. Portugal

16:00 - GUEST SPEAKER
A função da comunicação no Projecto Querença
Luís Caracinha

16:45 - SHOWCASE - Projects and ideas
Moderador / Facilitator: Francisco Paiva, UBI

Eco-Village Community - Live With Earth
Rui Vasques, Designer Sustentável e Empreendedor Social, IADE , Lisboa

Seis Looks e Um Guarda Roupa Completo
Priscila Borges Franco, Universidade da Beira Interior

Ant-32-Clay-08
Raul Pinto, Universidade de Aveiro

Refúgio (In)Susutentável de Emergência. Produto, Processo e Cultura.
Maria Neto, Faculdade de Arquitectura da Universidade do Porto, Jorge Marum, DECA, Univ. da Beira Interior, Covilhã

Vivercor - Corabitando: Proposta de Acção Comunitária
Verónica Conte, Faculdade de Arquitectura da Universidade Técnica de Lisboa

Desenvolvimento da Colecção Pampink_Bio em Fibra de bambu e Aplicações Artesanais
Gabriela Jobim, Universidade do Minho, Designer da Marca PamPink

Actividades de Eco-design para o Ensino Básico e Secundário
Francesco Pignatelli, Univ. Beira Interior, Covilhã, Portugal

50% Textil Wast Bag
Catarina Lopes, Maria José Geraldes, Univ. da Beira Interior

18:00
Closing Party
(Sala dos Arcos e Pátio da UBI)

INVITED SPEAKERS

ALASTAIR FUAD-LUKE
ALASTAIR FUAD-LUKE is Professor of Practice, Emerging Design Practices at the School of Arts, Design and Architecture, Aalto University, Helsinki, Finland. He is a design thinker, facilitator, enabler, educator, writer and activist contributing to the international debate about how design can encourage transition towards ecologically and socially sustainable ways of living. Since arriving in Finland in July 2011 he has worked with diverse stakeholders in the city of Lahti exploring how design can contribute to more positive societal impacts. He is the lead researcher from Aalto ARTS on a new EU Eco-innovera programme project entitled SHIFT (Support Systems for Sustainable Entrepreneurship and Transformation). During 2006-2008 he managed the EU Leonardo da Vinci programme project DEEDS (DEsign and EDucation for Sustainability) for the Danish organisation ICIS. Author of Design Activism: Beautiful strangeness for a sustainable world (2009), The Eco-design Handbook (2002,2005,2009) and The Eco-Travel Handbook (2008), he works across academia, social communities and commercial enterprises. He is an advocate of emergent design approaches, including design for societal transition, co-design, eco-design and slow design, and is especially interested in how these contribute to developing alternative socio-economic opportunities.
email: alastair.fuad-luke@aalto.fi
Aalto ARTS http://arts.aalto.fi/en
Blog http://window874.com
NODUS http://designresearch.aalto.fi/groups/nodus

LUÍS CARACINHA
Começou a estudar design em 2004 pelo gosto que tinha pela comunicação. Em 2010 formou-se pela Universidade do Algarve em Design de Comunicação. Durante os últimos anos tem desenvolvido projecto para várias empresas e entidades nacionais. Em 2011 fez parte da equipa de 9 jovens que integraram o Projecto Querença e que nos últimos tempos tem sido referenciado como um exemplo nacional de intervenção em territórios de baixa densidade. Atualmente é colaborador da empresa Skydraft e do Projecto Querença II.

CALENDAR

20/05 - Abertura do Call for Papers
30/09 - Submissão de propostas de comunicação
31/10 - Notificação de aceitação
01/11 - Divulgação do programa
10/11 - Submissão de projectos/ideias
22-23/11 - Conferência
31/12 - Envio do artigo completo

DESIGNA 2013

INTERFACE

PROCEEDINGS

UBI

FRANCISCO PAIVA
CATARINA MOURA (Orgs.)

PRESENTATION

INTERFACE supposes, from a start, an interaction process. It's a connection concept usually applied to informatics, electronics, arts and communication, progressively in a more virtual than material sense. Both an optical and a haptical phenomenon, eminently kinaesthetic, interface expands experience and enlarges the meaning of reality. It culturally stands for the multiple technological and meta-technological connections and mediations it operates, bringing opposites together: transparency and opacity, superficiality and deepness, linearity and complexity.

The most common interfaces are based on visual elements that execute commands in any given system, software, network or display. They depend upon the user and transfer information among several domains in a platform, fixed or mobile. Interface design deals precisely with the development of methods, systems and objects thought to allow connection and communication among humans, with and through machines, usually using visual displays (GUI - Graphic User Interfaces) which articulate aesthetical, functional and technological components. Research has been evolving a great deal in this domain, allowing us to find references to interfaces in a literal as much as in a metaphorical or analogical sense.

Being interface design an activity framed by several standards and conventions, it equally convenes the knowledge of the potential users' cultural and educational background. Any interface has its own dynamic in the way it establishes and operates the transition or the commutation between needs and means, and it can be evaluated under the perspective of both designers and users on its efficacy and efficiency. The relevant parameters to that evaluation go necessarily through clarity and consistency of information and instructions. The concern with the functional and aesthetical aspects of the several devices has evolved to more tangible concerns, which although progressively related to screens, extend to the fields of communication and product design as well as to the several areas of expertise that collaborate or intervene in them with their specific competences.

The idea of interface as mediation is, therefore, close to the one of infrastructure, network and ability to relate, transfer or condition information or energy, interacting with other systems or objects. In the age of cybernetics and electronics, in which new models of "presence" are rehearsed, interfaces catalyse connections between worlds that change reality and transform people. The majority of today's human activities are almost interdependent and unthinkable without such hypertextual or hypervisual devices, simultaneously gatherers, distributors and generators of meaning as well as of individual and collective skills.

Interface is, therefore, a polisemic concept able to reset the border between nature and artifice, collapsing the mechanic paradigm into a diffuse time-space continuum. In the adoption of interface as theme to its third edition, DESIGNA 2013 summons a spray of contributions coming from arts, design and architecture, giving them the possibility to intersect with other professional, scientific and technological domains.

Maintaining its matrix, DESIGNA aims to debate this subject through six panels: Communication, Multimedia, Product, Fashion, Theory and Education, inviting to the submission of original ideas that will incorporate the final program as communication or project.

PROGRAMME

21 NOVEMBER, Thursday - Auditório da Parada UBI

9:00 Reception and registration

10:00 WELCOMING SESSION

11:00 Coffee-break

11:15 Keynote Speaker

14:00 Panel 1 - COMMUNICATION

16:30 Coffee-Break

16:45 Panel 2 - MULTIMEDIA

19:00 Round Table

22 NOVEMBER, Friday - Auditório da Parada UBI

9:00 Opening

09:30 - Guest Speaker

10:00 Coffee-break

10:15 Panel 3 - PRODUCT (Anfiteatro 2.12)

10:15 Panel 4 - FASHION (Auditório da Parada)

14:00 Guest Speaker

14:30 Panel 5 - THEORY (Auditório da Parada)

14:30 Panel 6 - EDUCATION (Anfiteatro 2.12)

17:30 Coffee-break

18:00 Showcase - Projects / ideas

19:00 Closing Party

INVITED SPEARKERS

CHRISTA SOMMERER

Christa Sommerer is internationally renowned media artist working in the field of interactive computer installation and design of generative systems. She is professor at the University of Art and Design in Linz Austria where She head the Department for Interface Culture at the Institute for Media. Sommerer originally studied biology (botany) at the University of Vienna and modern sculpture and art education at the Academy of Fine Arts in Vienna (masters degree). Sommerer completed her PhD degree from CAiiA-STAR, University of Wales College of Art, Newport, UK. Sommerer, together with Laurent Mignonneau, previously held positions at the IAMAS International Academy of Media Arts and Sciences in Gifu, Japan and at the ATR Media Integration and Communications Research Lab in Kyoto Japan. They also were visiting researchers at the MIT CAVS in Cambridge US, the Beckmann Institute, USA and the NTT-InterCommunication Center in Tokyo. Their works have been shown in around 150 exhibitions world-wide and are permanently installed in media collections and have won mayor international media awards, for example at the Ars Electronica Award for Interactive Art (Linz, Austria), the Interactive Media Festival 1995 (Los Angeles, USA), the Multi Media Award '95, Japan and the World Technology Award in London 2001. They have published numerous research papers on Artificial Life, interactivity and interface design and they lectured extensively at universities, international conferences, and symposia. Sommerer is an International Co-editor for the LEONARDO Journal, MIT Press and in 1998, together with Laurent Mignonneau, she edited a book on the collaboration of art and science called Art@Science, published by Springer Verlag Vienna/New York (ISBN 3-211-82953-9).

JORGE SILVA

Jorge Silva, 55 years old, specialist in design, editorial and art direction of periodic publications. He was art director for the Jornal Combate, between 1978 and 2003, and O Independente from 1991 until 2000, where he created and developed several refurbishments and graphic projects for new supplements and magazines. Did the project for the first magazine of economics Fortuna. Between 1998 to 2001 was creative director of Salão Lisboa, show of comic book illustration, organized by Bedeteca of Lisbon.

By invitation of the direction of Público newspaper, created in 1999 the supplements Y and Mil Folhas, of which he made the direction of art in the years 2000 and 2001. In 2002 transitioned to the magazine Pública where he stayed until 2004. He was art director of magazines 20 Anos (1997-1998) and selected Ícon (1999-2001). In 2000 he was invited to the redevelopment of the literary magazine LER and in 2001 creates the atelier Silva!designers to develop magazine LX Metrópole, from Parque Expo. From 2007 to 2011 he held the Management functions of Art Publishing Group Leya. Is responsible for the blog http://almanaquesilva.wordpress.com which tells the stories of Portuguese history illustration. He teaches Art Direction for masters degrees at Faculty of Fine Arts in Oporto and teaches Design on the program Edition foor Children at the Catholic University, in Lisbon.

MARTA BORGES

Marta Borges (Porto, 1982) - Degree in Sound and Image / Digital Arts (UCP, Porto). Postgraduate in Digital Typography (ESAD, Matosinhos). A master's degree in Graphic Design and Editorial Projects (FBAUP, Porto). Works as a designer and communication (graphic, editorial, exhibition), web / mobile and multimedia. Trains since 2008/09 (ETG / Barcelos, IPCA; CESAE).

HERLANDER ELIAS

Degree in Communication, Master in Videogames, PhD in Anime. Professor in Strategic Communication, Researcher at LabCom - Online Communication Lab in Film and Media at the University of Beira Interior, Covilhã. Author of one of the first books on cyberculture: Cyberpunk - Fiction and Contemporary. At this time he is dedicated to technology and Digital Branding and her most recent book, Post-Web publishing in FormalPress, is now available Amazon.com.

CALENDAR

15/06 - Abertura do Call for Papers
15/09 - Data limite para submissão do resumo / abstract
15/09 - Abertura do Call for Projects / Ideas
01/10 - Notificação de aceitação
15/10 - Data limite para submissão de projectos / ideias
31/10 - Limite para inscrição dos autores
01/11 - Divulgação do programa final
21-22/11 – Conferência

DESIGNA 2014

DESEJO \ DESIRE

PROCEEDINGS

Francisco Paiva
Catarina Moura (Org.)

UBI

PRESENTATION

The theme that inspires DESIGNA's 4th edition focuses on the bond between Design and Desire.

The subject of Desire emerges explicitly in the public policies devoted to the arts and to the industry following the need to react to the competition of foreign products, more appealing to consumers. The diversified offer of distinct products to a same function adds the need to outstand and persuade to the object's intrinsic quality in order to make it comply with parameters such as identification and belonging, buying power, social status, gender and symbolic expectations.

The subjection to Desire is an inexorable trend of capitalist societies' dynamics, since this type of categories frame the equation of contemporary freedom of choice and individual expression. Through Desire, Design bonds with communication and mediation, in a sort of metaphysics of the concrete in which the capacity to create, promote, consume and use goods and services tend to reconfigure the aesthetical experience. The appeal to the imagination, or even pleasure, runs through Design's every domains. Paradoxically, such appeal aims for a position of loyalty and linkage to which not even the electronic platforms or the new media can escape.

Desire and imagination work as elaborate predication processes that reveal the individual's cultural substrate through an uncountable number of narratives and fictions, sources of education and production of knowledge.

Such cosmogony, connected with a certain epicureanism of contemporary life, may be able to question the humanities, as well as Design's more technological dimensions, bringing together crossed perspectives on Design's theory and practice, as well as on civic morals and body policies. Is precisely to understand the relevance and the ways in which Desire projects, programs and constitutes itself (with)in Design that DESIGNA invites to the submission of communication proposals.

PROGRAMME

20 NOVEMBER 2014, Thursday
(Anfiteatro das Sessões Solenes UBI)

9:00 Reception and registration

10:00 WELCOMING SESSION

11:00 Keynote Speaker

14:00 Keynote Speaker

14:30 Panel 1 - COMMUNICATION

17:00 Panel 2 - MULTIMEDIA

18:30 Round Table

21 NOVEMBER 2014, Friday
(Anfiteatro das Sessões Solenes UBI)

9:00 Opening

9:00 Keynote Speaker

9:30 Panel 3 - PRODUCT

11:15 Panel 4 - FASHION (Auditório 2.12)

14:30 Keynote Speaker

15:00 Panel 5 - THEORY

17:00 Panel 6 - EDUCATION (Anfiteatro 2.12)

18:30 Showcase - Projects / ideas

19:00 Closing Session

INVITED SPEARKERS

PASCHALIS PASCHALIS
Associate Professor at the Department of Design and Multimedia, University of Nicosia. He has presented and published papers in journals and international conferences on visual communication, user interface design and multimedia. He has worked on projects funded by the European Union, UNOPS and the Research Promotion Foundation of Cyprus. He has served as a member in various academic and reviewing committees and has been appointed by the Hellenic Quality Assurance & Accreditation Agency as a member of the team for the external evaluation of Greek Universities. He also practices project management, art direction, graphic/packaging and user interface design professionally and has more than 20 years of experience in the field. He has been teaching in tertiary education since 1998 and he is the founder and creator of the BA program in multimedia. He currently holds the position of head of the Department of Design and Multimedia.

SARA BALONAS
Assistant professor at the Institute of Social Sciences – University of Minho. She has a PhD degree in Communication Sciences since 2013. She teaches in estrategic Communication and Advertising. Her research work is focused on the reconfiguration of advertising, its role in society beyond consumption and as a contribution to a better citizenship pratice. Areas of study include: advertising in the social sphere, behavioral advertising, nonprofit communication strategies, corporate social responsibility. She is also interested in: territorial communication, political communication and communication with respect to religion. She is CEO of B+ Communication, an advertising company created in 2002 and founder

of Be True Programme for social responsability (2010). She is member of the board of a non-profit association and regular columnist in a national newspaper (since 2012). She has been ambassador of entrepreneurship, nominated by the European Commission (2010-2013).

JORGE DOS REIS

Master of Arts from the Royal College of Art, PhD in Communication Design from the University of Lisbon. Assistant Professor at the Faculty of Fine Arts where he founded and directs the MA in Contemporary Typographical and Editorial Practices. Has a dual activity as a designer and artist, is graphic and typographic design since 1996 in his own office; exposes design and make performance, performing solo exhibitions and has participated in several group exhibitions.

ANA LEONOR M. MADEIRA RODRIGUES

Artist who has exhibited regularly since the 90's. As a researcher is interested in the cognitive processes of the act of drawing and its specific character as a non-verbal mode of communication. He graduated in Fine Arts at the School of Fine Arts in Lisbon. Between 1989 and 1992 he lived in Berlin, where he specialized in Aesthetic and Artistic Communication, Hochschule der Kunst . Holds a PhD in Architecture (Visual Communication) and is Chairman of the Department of Design and Visual Communication and Associate Professor at the Faculty of Architecture of the University of Lisbon.

ALEXANDRA CRUCHINHO

Associate Professor in the School of Applied Arts (ESART) of the Polytechnic of Castelo Branco since 1999. Master in Theories of Art in 2002 at the Faculty of Fine Arts, University of Lisbon. PhD from the School of Engineering, University of Minho in the field of Textile Engineering - Branch of Management and Design. Researcher at CIEBA (Research Centre for Fine Arts), University of Lisbon. Teaches units in Fashion Design, Photography, Photojournalism and Advertising, Fashion Production, Theory and Practice of Design, Design History, Sociology and Culture of Fashion and Design Stage area. Coordinates the production of fashion shows, backstage and roullement collections of renowned designers (Katty Xiomara, Maria Gambina, José António Tenente, Luís Buchinho, Nuno Gama, Alexandra Moura, Dino Alves, Filipe Faísca, Júlio Torcato, Ana Salazar, Miguel Gigante, Anabela Baldaque) and some brands (Kispo, Concreto, Dielmar, Macmoda, Lanidor). Graduated in Art Direction for Fashion at Saint Martin's College of Art and Design.

NOCA RAMOS

During the night of July 4th 1975 I've decided to be born to this world.
I suppose I must have been indecisive about it because the doctors took some minutes to convince me, since I was born dead.
I've died more times during the next 39 years, but I was also born as many.
I studied all the necessary years to get in College.
I've got lost and found many times in Architecture School, but one day I was fed up with labyrinths and decided to study Design at the University of Aveiro.
After finishing my academic path in the universities I decided I really wanted to learn.
Learn new things…
Experiment new things…
… and most of all keep challenging myself with new projects that make me follow through unknown trails.
Make-believes made with open heart and, most of the times, eyes wide shut.
That's how, almost by accident, I've got here.

ANA MESTRE

She graduated from Industrial Design at IADE – the Institute of Visual Arts and Design (Lisbon) in 2001, and obtained a Master of Science degree in Renewable Technologies from the New University of Lisbon in 2005. Ana started her professional career in 2001 as an eco-design researcher at the Portuguese National Institute of Technology and Innovation (INETI). In 2004, she was invited to be an Assistant Professor in the field of Design and Sustainability at the IADE (Lisbon). In the same year, she became the founding director of SUSDESIGN – Design for Sustainability Studio, Consultancy, Education, and Research, based in Lisbon. Since 2006, "Cork Design" has been Ana's primary research subject, and she is the creator and director of "Design Cork for Future, Innovation, and Sustainability" (also the title of her first cork book), the first internationally applied design research initiative for cork innovation. In 2009, while developing her PhD studies at the Delft University of Technology, under the subject of "Cork Design" she become founder, design director, and resident product designer of the CORQUE DESIGN Brand. As a professional designer, Ana presented her work in several international initiatives and exhibitions around the World (Lisbon, London, Berlin, Milan, Porto, Helsinki, New York, Los Angeles, Shanghai, Tokyo, Hong-Kong, Rio de Janeiro, and São Paulo are some examples). 2011 was the starting year for SUSVISION – the first formal academic and professional network for "Sustainable Design" within the "Lusophony" (Portuguese-speaking) context, focusing on the specific socio-cultural and economical aspects of the Portuguese Speaking Countries, and using design as a "strategic innovation approach" in international collaborative projects. She is presently the Portuguese Coordinator for REGIO-CRAFTS – Regional Cooperation for Crafts Development, of the INTERREG European Commission initiative. Ana has recently published in the "Journal of Cleaner Production", the "Journal of Design Research", and the "Pages of Art & Design Journal", amongst other previous participations including the "Design Research Society" conferences and publications.

CALENDAR

31/03 Abertura do Call for Papers
31/05 Data limite para submissão do resumo
01/07 Notificação de aceitação
30/09 Data limite para submissão do artigo completo p/ publicação
31/10 Limite para inscrição dos autores
01/11 Divulgação do programa final
20-21/11 Conferência