iP- 688

VEM TAR KONTAKT?   VAR TAR MAN KONTAKT?   DEFINIERA BEHOV   VÅRDPLANERING

Själv

Familjen/ Granne mfl

Social- tjänsten

Polisen

Akuten

Mobila Teamet

Vård centralen

distrikts sköterska

JOURNAL

bedöm- ning

Behand- lingshem

åka hem

Akut- psykiatriska avdelningen

Hem

KANS

Team Rehab

KANS

ANSÖKAN OM STÖD

stöd

LANDSTINGET

KOMMUNEN

medicinering

Tillbaka vid akuta behov

stöd

övr. kontakt- personer

Försäkrings- kassan

Social- tjänsten

Sociala Stödteamet

Nätkraft   Yttre nätkraft

Stöd boende

IVOR plan

Enhetschef

Boende handledare

UPPDRAG

UT- REDNING

Omslagsbild:

Vision ur projektet "Den psykiskt funktionshindrandes väg genom vården". Med hjälp av design i den kreativa processen visar projektet hur man kan mer än halvera antalet personer som möter en patient i dagens vårdsverige. Ett samarbetsprojekt mellan Stiftelsen Svensk Industridesign, TILLIT Kommunikation och Struktur Design.

Designbreddningen

Robin Edman, VD
Svensk Industridesign

Vad är design? - Att förändra innehållet i ett begrepp eller en profession är en utmaning, men det är alltid en lika stimulerande uppgift och en ofrånkomlig del av vår framtid. Svårigheten ligger dock i att behålla det karaktäristiska och undvika att innehållet blir utslätat. Det finns givetvis också utmaningar när design nu används på en allt bredare front som utvecklingskraft i arbetet med att skapa tillväxt, vilket är en del av förhoppningarna i regeringens satsning på design. Ibland får man dock en känsla av att många fortfarande ser den här designsatsningen utifrån ett snävt tredimensionellt formgivningsperspektiv - en fråga om snyggt eller fult.

Detta syns främst i media men även i andra sammanhang. Den internationella trenden inom industridesign är dock oundvikligen en breddning både av designbegreppet och av industridesignerns verksamhet. Denna breddning sker framförallt inom tjänstesektorn och design av tjänster. Detta återspeglas bland annat i de stora internationella industridesignföretagen men även i utvecklingen av utbildningar inom design. Både i Italien och i USA har det t.ex. startat magisterutbildningar som är starkt fokuserade på tjänste- och konceptutveckling. Omvärldskunskap, det sociala ansvaret och ett ökat fokus på samarbete mellan det privata och offentliga blir allt mer betydande. Det framgår inte minst av artiklarna i detta nummer av Designjournalen. Då har vikten av att utbilda "designköparen" blivit än mer uppenbar för att lyckas i det fortsatta arbetet.

I Sverige kan vi se hur tjänsteaspekten inom design blivit alltmer central. Ett exempel på detta finner vi inom vården i Umeå under beteckningen "Tillit". Samverkansprojektet, med stöd från Svensk Industridesign, inkluderade kommun, landsting och det privata näringslivet. Målet var att öka tryggheten och livskvaliteten för de psykiskt funktionshindrade genom en bättre samverkan med olika vård- och omsorgsgivare, samt en bättre tillgänglighet genom enklare kontaktvägar. Individen och användaren sattes i fokus, d.v.s. ett karaktäristiskt industridesignperspektiv. Både studenter från Umeås Designhögskola och ett industridesignkonsultbolag engagerades för att se om deras kompetens och arbetsmetodik kunde vara effektiv för utvecklingen av framtidens vård. Tillsammans analyserade och utvecklade de kommunikationssystem och utrustningar. De skapade också en vision för hur vårdkedjans organisation skulle kunna se ut utifrån brukarens behov. Insatsen bedömdes som värdefull och samarbetet fortsatte hela projektet ut. "Tillit" är ett exempel på hur designmetoder kan bidra till att förbättra den just nu så omdebatterade offentliga vårdsektorn. Det visar också hur design kan bidra i utvecklingen av tjänster som innehåller både organisation och utrustning.

I utvecklingen av tjänstesamhället har design en viktig roll där design är det gemensamma och kreativa uttrycket för skapandet av processer, budskap, varor, tjänster och miljöer. Genom att använda grundstenarna i designprocessen på helt nya områden kan vi medverka till att det skapas många nya organisationer med produkter och/eller tjänster som bygger på omtanken om kunderna och deras kunder. Men för detta behöver utbildningarna på grundnivå utvecklas och därför behövs också forskningen. Här har SWIDREA (Nationell forskarskola för design) en viktig roll att spela - genom att etablera en forskarskola kan vi erbjuda doktorander relevanta kurser i frontlinjen av det som händer inom designområdet men också bidra till att utvecklingen av den vetenskapliga designnivån i Sverige höjs. Forskningen hjälper oss också att hitta svaren och sprida kunskap om vad som verkligen är design när design breddas.

Innehåll

Redaktörsanteckningar

Återkomsten av den sociala designen

Lisbeth Svengren
Företagsekonomiska Institutionen,
Stockholms universitet

Ett återkommande tema inom industridesign är designens - och designerns - sociala och etiska roll. Visserligen lite nedtonat tema under diskussionerna på 1990-talet, men om man ser till de forskningspapers som presenterades t ex vid årets European Academy of Design (EAD) konferens i Barcelona, så har många frågor från tidigare årtionden återkommit. Frågorna känns igen - designens kommersiella roll, designens ansvar för människans välbefinnande och inte minst miljön. Men samtidigt har förutsättningarna och därmed också svaren förändrats.

Vi lever i en globaliserad ekonomi/marknad, samhällsstrukturer har förändrats och likaså levnadsvillkoren - fler kvinnor arbetar, gamla traditioner som präglade vardagen har försvunnit och/eller omvandlats, och den demografiska och etnografiska sammansättningen av befolkningen har förändrats - fler äldre och fler människor med invandrar-bakgrund. För miljön har hoten blivit större.

Inom industridesign har det ofta ställts kritiska frågor om vad man gör - även om det är länge sedan Victor Papanek var i Stockholm och förorsakade revolutionsstämningar på Konstfack. Papaneks bok, Design for the Real World, har förresten återlanserats och läses nu av en ny generation. Visserligen har de kritiska frågorna oftast stannat på ett teoretiskt plan och marknadens krassa verklighet har lett till att designuppdrag ändå har accepterats - återigen har designen bidragit till konsumtionshysterin och snöd vinstmaximering.

Kan man begära att designerna ska ta ett större ansvar än någon annan yrkesgrupp? Varför skulle inte marknadsförare till exempel vara de som engagerade sig för en bättre värld, för mer etik i marknadsföring och konceptutveckling?

Eller att reklambyråerna tog ett större ansvar, en annan grupp av verkställare av marknadsförares uppdrag? Svaret är givetvis ja, visst borde de kunna ta ett större ansvar, men det hindrar inte att även designer initierar vissa frågor - utifrån en tradition av användarperspektiv i sitt arbete. Designerns arbete utgör gränssnittet gentemot brukaren och designer har dessutom en tradition av att integrera en mängd olika företagskrav med kommersiella krav. Designer har som starka vapen både sin yrkeskompetens och förverkligandet av koncept. "Designers have the opportunity to use the impetus of social change as a means of influencing human behaviour, extending, facilitating and directing it. Are we guilty of exploiting change solely for commercial benefit, promoting consumerism, or have we the wisdom to use design responsibly as a benign agent for the improvement of human society" Denna fråga ställer bland annat Bill Stewart i den inledande artikeln i detta nummer av Designjournalen.

En aspekt som har förändrats och som stödjer designerna i dessa utmaningar är att design har fått ett större akademiskt fäste, d.v.s. fler personer forskar om och i design. Det kritiska tänkandet är en del av akademins uppgift och därmed ställs också fler kritiska frågor utifrån ett socialt och miljömässigt perspektiv.

Vid årets EAD konferens i Barcelona presenterades totalt 146 papers varav ett trettiotal tog upp frågor kring miljön, globaliseringseffekter, fair-trade och sociala villkor. En grupp forskare från Valenica i Spanien presenterade t. ex ett projekt där man tagit just Victor Papaneks boktitel Design for the real world med syfte att utnyttja den sociala potentialen i produktdesignerns profession i samarbete med tredje-världen-konstnärer. Målet är att få fram produkter som tilltalar västvärlden

och ändå behålla traditionella produktionsmetoder. I detta nummer av Designjournalen publiceras ett fåtal av dem som presenterades vid EAD-konferensen. De representerar fyra olika kritiska områden där design kan ha eller har en roll. Dessa är konsumtion, kriminalitet, stress och miljö.

Bill Stewart, forskare vid Sheffield Hallam University, presenterade ett paper om det sammanhang i vilket förpackningsdesign finns idag, den allt större konsumtionen av färdiglagad mat och dess konsekvenser som näringsfattigare mat och sämre matkunskaper ger. I sitt paper visar han på de utmaningar som designerna i den här branschen står inför och formulerar några av de frågor som kan vara en utmaning för designern. Detta är samtidigt inte något som en enskild designer eller ett företag kan driva utan det är villkor som berör yrkeskårens förhållningssätt och utövande. Om det är någon yrkesgrupp som i sitt samarbete med marknadssidan skulle kunna utöva ett inflytande så har designerna ändå ett ansvar att utmana vedertagen praxis.

Design eller designers kan inte lösa världens alla problem. Men på samma sätt som design kan bidra till bättre produkter och ökad vinst för företagen kan design också bidra till bättre produkter i olika sociala sammanhang. Ett sådant sammanhang som blir allt mer problematiskt är den ökade kriminaliteten. Design kommer inte att påverka den socialt betingade kriminaliteten, men kan möjligen bidra till att reducera den situationsbundna, d.v.s. den kriminalitet som sker därför att det betraktas som lätt och lockande att göra. Denna aspekt har man tagit fasta på i Storbritannien och regeringen har initierat ett projekt om hur design kan förhindra brott - Design Against Crime. Den forskningsmässiga delen drivs av ett team från Sheffield Hallam University och University of Salford. Inom projektet har man tagit fram ett antal fallstudier som visar på designens roll och bidrag till att reducera kriminalitet, i butiker, i parker,

på pubar, etc. Dessa fallstudier används bland annat i designundervisningen, men man anordnar också konferenser för olika intressenter. Ett dilemma som lyfts fram i det paper som presenteras här är den så kallade Davyprincipen, d.v.s. att man designar något som ger en illusorisk säkerhet: sänker rädslan för brott och ökar istället exponeringen.

Sara Ilstedt Hjelm, doktorand vid Interaktiva Institutet/CID, KTH, har studerat i vilken utsträckning tekniska produkter och andra artefakter stressar människor. Det är väl knappast förvånande att vi blir stressade av den mängd av tekniska prylar som vi idag känner att vi måste ha men inte alltid behärskar och kanske mer ger en inbillad än verklig effektivitet. Sara bidrar med en kategorisering av hur stress i relation till artefakter upplevs utifrån ett sociologiskt perspektiv. Framförallt bidrar Sara med att konkretisera aspekter av den breda definitionen av estetik och därmed bidra till att också definiera designbegreppet.

Den sista artikeln av Ian Grout, lektor i produktdesign vid The Glasgow School of Art, och Ingrid Kajzer, doktorand i marknadsföring vid Strathclyde University i Glasgow, fokuserar på miljöfrågan och även om den här debatten har pågått länge är den tyvärr fortfarande högaktuell. Vi kommer inte undan att miljön står inför allt större hot. Grout och Kajzer menar att produktdesigner har bara börjat förstå implikationerna av att integrera uthållighet i sin designverksamhet, men att man fortfarande förnekar den vidare globala ekologiska krisen. Deras paper ger inte heller alla svaren men är ett bidrag i den utveckling som är nödvändig. Om vi vill förändra världen till något bättre.

Sammanfattningsvis kan man konstatera att alla författarna pekar på den breda roll, de många frågor och utmaningar som designer i det industriella sammanhanget måste - eller bör - ta ställning till i sitt arbete. Grout och Kajzer avslutar sin artikel med ett lämpligt Gandhicitat: "We have to be the change we want to see".

Design as an agent for change in a consumer society

Text: Bill Stewart

Bill Stewart
Sheffield Hallam University
Art & Design Research Centre
Psalter Lane
Sheffield
S11 8UZ, UK
b.r.stewart@shu.ac.uk

Senior Research Fellow,
Sheffield Hallam University
Bill works within the Art & Design
Research Centre at SHU and is
founder of the University's packaging design consultancy, The
Packaging Partnership.
On-going research projects include work on virtual transit test regimes, EPS recycling, intelligent
labelling, and cultures of consumerism and lifestyles.

He is a course tutor on the BA
(Hons) and MA Packaging Design
courses and author of 'Packaging
as a Marketing Tool' and 'Packaging Design Strategy'.

Previously, Bill was UK Packaging
Engineering Manager at 3M (UK)
plc before joining Siebert Head
Ltd, London, as Technical Director.

This paper focuses on the culture of consumer society and examines the role of design both as a protagonist for consumerism and as a re-actor against it.

Within the last twenty years, socio-economic changes within the UK have profoundly altered the fabric of society and, with it, the lifestyles of its citizens. Designers have the opportunity to use the impetus of social change a means of influencing human behaviour, extending, facilitating and directing it. Are we guilty of exploiting change solely for commercial benefit, promoting consumerism, or have we the wisdom to use design responsibly as a benign agent for the improvement of human society? In addressing these issues through the practice of design, both our understanding of society and our participative role as designers are challenged. Our self-knowledge increases yet we may still struggle to identify those paths which contribute to improving the quality of life and the means by which to follow them.

The paper draws on a current research project which considers the impact of design within the framework of consumerism and lifestyle change. It examines contemporary UK society and identifies the factors which direct it now and will influence it in the next decade. In parallel, it seeks to establish whether design itself is a proactive component in determining the direction society will follow or whether its role is passive, reacting to change rather than initiating it. It questions the ethics of marketing and consumerism and how design wisdom may challenge their authority, influencing current and future consumer cultural directions.

We are all consumers. The scenario in which this paper is set focuses on the supermarket environment, a familiar enough experience for most of us. It is where many of us begin the cycle of consumerism and repeat it at regular intervals. Unlike buying a car, for example, where high value involves a high degree of involvement, buying groceries is a relatively low value, low involvement process. We are prepared to experiment through our choices with little risk attached. Unlike the car, there is nobody to help us and, again, in contrast to the car, we will be buying frequently. In the supermarkets, brands and products have to work hard for our attention. The design of packaging becomes critical.

This multiplicity of brands and product offerings, combined with low-risk decision making, provides an ideal

platform for examining consumer behaviour and lifestyle trends.

The significance of a study conducted solely within the UK should not be lost on those from other countries. What is happening here in the UK may already be finding resonance within other countries. If not today, it may be tomorrow, for better or for worse.

The UK consumer

Within the EU, the UK remains the most isolated state, geographically separate from mainland Europe. It is also the European State which maintains closest links with the USA. Sharing a common language has enabled the process of importing cultural values from other countries and, in particular from the USA. It is, perhaps, partly for this reason that the UK has pursued a US style in its patterns of consumption and been less influenced by its European partners.

Past colonial imperialism has resulted in a long established cultural diversity amongst UK citizens, significant here, in the context of food and eating habits discussed later in this paper.

Within the last twenty years, socio-economic changes within the UK have profoundly altered the fabric of society and, with it, the lifestyles of its citizens. During this period, the UK has largely moved from a production-based economy to one based on services. Traditional, rigid structures have been replaced by a flexible forum wherein, for example, the stereotypes of age, gender and social class are becoming increasingly blurred. As late as in the 1980's, it was the barriers of class, education, religion, political allegiance and issues of gender which helped create an identifiable diversity amongst the populous.

In today's post-production Britain, lifestyles are very different. People have become less involved with traditional barriers, moving towards a more egalitarian society, a mass market of individuals where our differences are less apparent.

Demographics become less relevant while the distribution of wealth and choice of lifestyle become of greater significance. While the demise of a class-ridden society is welcomed by the majority, it has introduced new anxieties.

We can no longer expect a career spanning our working life. Contracts have become the norm, changing our attitude to work, sometimes from a vocational calling to simply a job and introducing uncertainties. Trust in authority has been eroded and we have become openly sceptical of political motives, businesses and financial institutions. Our personal relationships have changed with families becoming dispersed, an increasing number of single parents and people living on their own. These and other changes have played a fundamental part in transforming the way we live in the UK.

Curiously perhaps, while people are keen to maintain their own identity there is also a human need to belong to a tribe or community. With the erosion of traditional communities, the church, political affiliations, amongst others, new groups are forming to fulfil the social need for tribal behaviour. These span the demographical divide in all respects. Examples include, health clubs, chat lines, environmental groups and participation in Non-Government Organisations Characteristically, these new groups are inclusive in terms of age, gender and ethnicity while personal wealth may be disparate.

Marketing to the UK consumer

Such plurality in society, however, requires a rethink of the way market sectors are defined and the relationship between market, design and consumerism. It is increasingly difficult to segment markets in a meaningful way and to identify customers or potential customers with shared demographic characteristics, values or needs. The traditional methods of market research to target consumers who share attributes are now less effective than previously the case simply because

people now move seamlessly across market segments. A fortyfive year old mother may be a student; an eighteen year old may run a successful business or, as a personal friend has done, a sixtyeight year old woman may gain her sub-aqua license. Trying to place a real flesh and blood person in any one segment becomes difficult.

There do, however, remain some exceptions where actionable segmentation can operate. Families expecting a first child are an example, where companies producing not only nursery products but also items such as cameras, can effectively define their target market. Such instances of easy targeting are becoming rare and marketing seeks alternative strategies both to define and to exploit markets. Some market research strategies are based on sophisticated modelling techniques, others, typically those employed by the multiple groceries, can use data collected through loyalty cards schemes. In the UK, Tesco pioneered the introduction of loyalty cards in 1995. They provided an immediate platform for the collection of consumer lifestyle data and spending patterns. The computing power required to analyse the mass of information acquired, however, is only now being realised. Tesco have established a subsidiary data-mining company charged with the task of identifying means of attracting new customers, consumer reaction to promotions and the monitoring of emerging trends. Additionally they employ video in-store surveillance and eye-tracking equipment to monitor consumer behaviour. Little, in the arena of supermarket operations is left to chance.

Grant (1999) suggests that targeting an audience of individual members may be replaced by encircling them with information and ideas. It's a more subtle approach, typified by Sainsbury's use of their in-house lifestyle magazine, or Proctor & Gamble's parent's internet site. This encourages self-selection, providing consumers with a way of finding the products

and services which they want, reversing the traditional relationship between customer and company. Cost sensitive air travellers, for example, will find their own way to Easyjet and will be prepared to sacrifice flexibility in scheduling to gain low cost airfares. Its part of a successful marketing strategy adopted by the company.

Within the supermarket environment, self-selection of pre-packed products has always the rationale for operating successfully. Now, however, supermarkets and brand manufacturers are looking at how to adapt the format to cater for a new and changing consumer profile.

One approach is to tailor product lines, designed to meet the needs of specific sectors. An example can be found in pregnancy testing kits. Forsythe et al (1999), refer to the US company Quidel who are active in this market. They identified two separate kinds of women, those that want to get pregnant ('hopefulls') and those who were afraid that they might be ('fearfuls'). There is no actionable demographic distinction between the two segments. The company's marketing strategy was to create two distinct brands, 'Conceive' for the 'hopefuls' and 'Rapid-Vue' for the 'fearfuls'. 'Conceive' features a smiling baby and is positioned with ovulation kits while 'RapidVue' omitted any baby photography and was positioned near the condoms.

Self-selection is also encouraged by both extending product offering in terms of size and through product diversification. We can see the results of this strategy clearly demonstrated in the laundry category of products. Laundry products for domestic washing are a commodity item. They fulfil a simple role in cleaning our clothing and are not products most consumers find engaging or stimulating. The rise in single households, a continuing trend, brings a dilemma for men, in particular, regarding the choice of appropriate detergent. This applies to young men, traditionally catered for by their mothers, together with

older males who find themselves on their own.

If the marketing strategies discussed above were to be applied we may anticipate that the single male market sector would be addressed. Not so; at least, not yet. A typical edge-of-town branch of Tesco (Abbeydale Road, Sheffield, in this instance) stocks 131 different product offerings in this category, excluding fabric conditioners. This already is an extraordinary and confusing proposition, making choice more difficult and not easier. The choice includes a combination of pack size, brand, powder, liquid, concentrate, sachet, tablet, bio, non-bio, colour, aroma, performance, handwash, twin wash, automatic wash, fabric type, dosing balls, nets and original soap flakes. The shopper is presented with a vast array of packaging but with no guidance. We may speculate whether or not a simple solution for men would be successful or not but, if adopted it would become yet another addition to the range. Following the same principle for other niche markets further extends the number of products displayed. One might assume that others would have to be withdrawn but, as we shall see later in this paper, that is seldom the case.

Similar product extensions exist in other categories, particularly in cereals, ready meals and coffee. With an edge of town supermarket already offering between 30,000 and 45,000 stock-keeping units, we may anticipate yet further increases in stock levels if marketing continues to base it's activities on pursuing yet smaller niche markets.

The relationship between consumer, market and design

Clearly, design today can be perceived as being closely linked to commercial exploitation. In post-production Britain, as elsewhere, it is used as a tool for selling products and services and, in this role, obedient to marketing and the criticism of helping to fuel consumerism. The designer becomes a critic of what is available on the market and, directed by marketing, provides design expertise to elicit solutions which exploit opportunities or overcome problems. The design process is largely linear, moving from marketing brief through concept generation to final design solution.

In this strictly commercial arena, the results are not measured by design awards nor by social improvement but by increased sales revenue. This is the harsh reality for much design output. It suggests that designers are solely expert operators in the cycle of consumerism, manipulative purveyors of products which we may not need. Here, designers may be perceived largely as an elite looking down on society with little concern or responsibility for the direction design decisions are propelling it.

It can be argued that well designed products which meet individual needs add value to people's lives. The provision of a ready meal, from the freezer to the microwave may meet the needs of those with little time. It might free individuals to spend more time with their families or in other worthwhile pursuits. Similarly, provision of choice is often regarded as a positive attribute, particularly by the supermarkets themselves. We associate it with democratic values, wealth and the empowerment of citizenship. Choice becomes our right and, conversely, lack of choice associated with oppression and poverty. These simplistic associations are inappropriate within a consumer society where choice becomes excessive, eventually a negative value rather a positive benefit. From the perspective of those outside the system and who may have little 'choice', it may be viewed as desirable luxury.

Yet, designers are also citizens and participants in society and its cultures. We may draw a distinction between design originating from and fuelled by cultural experience and that directed by profit motives alone. While we all have to earn a living, we may, as a community, make our pitch for a better world.

The ready meal market

When considering issues of consumer behaviour, the selection and purchase of food becomes an interesting area of study as, unlike many other areas of consumer practise, it is an activity entirely inclusive of the total population. This paper, however, focuses on ready meals, one of the most significant product categories within the supermarket.

For this study, Mintel's (2002) definition of ready meals was used:-

Pre-prepared and pre-packed food where there has been an element of recipe input beyond mere processing on the part of the manufacturer; and where the product is already prepared and partially cooked to the point that it only requires reheating.

This definition excludes raw meal centres such as marinated meats and products such as fish fingers or fish in sauce.

The market for ready meals is an area of high growth with sales of chilled ready meals now exceeding £1.2 billion, twice that of 1997 (Mintel, 2002). Sales of frozen ready meals are also set to rise from their projected base of around £772 in 2002 through the introduction of more appealing menus. In the frozen food sector, this marks a distinct move from frozen vegetables to menu meals. Clearly, ready meals are becoming a significant product sector for consumers and it is the fastest growing sector within supermarkets.

With sales of ready meals increasing, we need to establish who is buying them.

In a survey of 25,000 adults commissioned by Mintel, the following key data can be extracted (Mintel, 2002)

Household penetration of ready meals:
Increase from 58.1% in 1997 to 75.6% in 2001
Comment: Significant increases overall

Usage by age group:
Light users (two or three times/
month or less)   45-64's
Medium users (once a week)   15-54's

Heavy users
(more than once a week)   15-44's
Comment: Light users include a high proportion of post-family consumers who may be leading active lives and no inclination to cook.

Usage by income:

£6999 or less	72%	heavy users
£20,000 -29,999	79.7%	heavy-medium users
£40,000 or more	81%	light users

Comment: The lowest earners here include students who are likely to have a low inclination to cook. The highest penetration is in the highest income group who may also be the group most time poor. They are, however, light users.

The report also indicated little significant differences by region or by demographics. It did indicate, however, that women are important to this market. Not only being the principle purchaser, women now make some 45% of the workforce and so may have both family and professional responsibilities. The ease of cooking ready meals, particularly in the microwave (for safety reasons), encourages children to prepare food for themselves.

Fragmented mealtimes were also highlighted in the report as a continuing trend. With family members eating at different times, ready meals can be selected which particularly appeal to individual taste rather than a traditional meal for all.

Finally, the report suggests that purchasing decisions are no longer based on convenience, this has now been accepted as the norm. Price, flavour, quality and innovative product/pack design are more decisive factors in selecting products.

As part of a wider research programme, surveys have been conducted into food purchasing behaviour in different multiple grocery outlets. For the purposes of this paper, however, the following survey

results are typical of the sector, providing an indication of activity and an understanding of scale. This survey was carried out at Tesco's, Abbeydale Road Sheffield, a typical provincial edge of town location. Here we consider frozen and chilled ready meals but exclude ambient ready meals and pizzas. (The Pizza category is considered to be sufficiently large to constitute it's own product sector. Ambient ready meals, such as pot-noodles, are also classified separately)

In total, three hundred and sixty different products were offered under Tesco's ready meal categories. Some products could be regarded as 'meal centres', where additional accompaniments such as salads, rice or potatoes could be added to provide a more interesting meal. Portion sizes also varied and, particularly with Indian food, it would be usual to select more than one product to provide both quantity required and a feeling of authenticity.

The categories below are defined by Tesco and illustrated by typical product offerings in the chilled product sector.

Tesco Finest	13 items		
Roasted vegetable & sunblush tomato risotto		400g	£2.99
Duck in plum Sauce		500g	£6.99
Meals for one	8 items		
Teriyaki chicken		475g	£2.99
Chicken & chorizo paella		475g	£3.49
Convenience Kids	12 items		
Chicken nuggets & chips		180g	£0.99
Chicken & vegetable smiley face pie		235g	£1.39
Mega meals	20 items		
Tuna pasta bake		500g	£1.49
Lasagne		1.5 kg	£3.79
British meals	20 items		
Sausage and mash		450g	£1.99
Chilli beef wedge bake		900g	£3.79
Vegetable meals	9 items		
Vegetable pasta bake		380g	£1.59
Vegetable fajitas		450g	£2.99
American meals	25 items		
Rustlers hot dog		145g	£1.38
Tex-Mex takeaway		1kg	£5.99
Indian meals	34 items		
Bombay potato		350g	£1.69
Indian meal for two		1.75kg	£7.49
Oriental Meals	37 items		
Battered sweet and sour chicken		350g	£2.99
Chinese banquet		1.9kg	£9.99
Italian Meals	26 items		
Beef cannelloni		340g	£1.49
Bolognese pasta bake		850g	£2.99

It can be seen that 'international' menus dominate, reflecting perhaps a British fondness for Indian and Oriental cuisine in particular. In addition to further expansion in this area, it is forecast that the premium sector will grow, together with organic, healthy eating and children's meals.

The frozen ready meal sector follows a similar pattern after lagging behind in new product development. There is considerable potential to capitalise on the lack of preservatives required and on the safe use of microwave cooking, particularly for children's products.

Discussion

There is little doubt about the increasing popularity of ready meals and their appeal to both time-poor and skill-poor sectors of society. So for both students on a limited budget and busy professionals, there is a reason to purchase. Women, particularly those balancing a working life with a family, find these products useful in both catering for differing tastes within the family and convenient in coping with different family timetables.

While there is an identifiable and growing market for ready meals across a wide range of the population, conversely, there is also much public interest in cooking. Cooking books remain high in the 'best sellers' list while prime time TV features more cooking programmes than ever before, providing a platform for chefs to become media stars. The programmes are part instructional and part entertainment, depending upon the celebrity chef performing. While the tone may vary between programmes, the pattern emerging is one of removing everyday cooking from recreational cooking. We may for example, eat ready meals at some point during the week yet prepare and cook something special for friends and family.

As potential design participants in this arena, we may take the view that new and innovative presentations of ready meals are satisfying an established demand. We may spend some of our working lives developing concepts which take convenience a step further. An example here, is the 'All American Breakfast'. A pre-packed product which can move from freezer to microwave and deliver, chilled orange juice, hot coffee, crisp bacon, potatoes and eggs - in just three minutes. The technology is impressive even if the results are inedible. Is this the route we should be following? Through clever design we can achieve such results and, as technology improves, better convenience products. Before we embark upon that particular journey, we may need to reflect upon some negative aspects.

There is currently an ongoing UK government research programme, under the aegis of the Food Standards Authority, to investigate claims that it the socially disadvantaged groups who are becoming obese while the rich are diet obsessed. The National Audit Office (Guardian, 2001) is reported to be claiming that nearly six in ten adults are now obese, with a correspondingly high increase in the number of overweight children. While obesity results from both a poor diet and lack of excercise, there has been widespread criticism of the increasing dependence on ready meals.

In addition, it is claimed that the use of ready meals is eroding both cooking skills and masking the true nature of vegetables, in particular. Ready meals specifically designed for children often deliberately disguise vegetables in an attempt to persuade children to eat them. Anita Cormac (2002), director of the RSA's programme, 'Focus on Food', states, *"We don't believe we should hide any foods from children, but introduce them to a full range of foods including vegetables from an early age. Ready meals and TV dinners are not the answer to a very real problem"*.

It is perhaps in the interests of celebrity chefs to promote an interest in food but some are now beginning to lend their

status to campaigns for educating the public in general and children in particular to a healthier diet of fresh food. Through, for example the RSA's campaign, Focus on Food', backed by the retailer Waitrose, chefs are involved in helping schools develop practical programmes surrounding food issues.

Conclusion

Our rapidly changing society presents us with opportunities but also dilemmas. As designers we can influence society but only if we see the whole screen and not just the individual pixels we happen to be working on.

In this study, the development of ready meals has been shown as a trend set to continue, with little regard for the consequences in terms of health, social interaction and educating our children about food - real food. This is an issue for marketing, certainly but also an issue for designers. If the design community wishes to contribute positively to the improvement of human society, it may need to challenge current marketing practise. Surely we can do better.

Bibliography

Fiell. Charlotte and Peter,(1999). Design of the 20th Century, Taschen

Forsyth, John et al (1999). A Segmentation You Can Act On, Mcinsey Quarterly

Grant,John (1999). The new marketing manifesto,Texere

Klein, Naomi (2000). No Logo, Flamingo

Lupton,Ellen and Miller, Abbott (1996). Design Writing Research, 2nd ed, Phaidon

Meikle, James (1999). Poor to be offered cooking lessons to improve diet, The guardian, May 12, 1999

Meikle, James (2001). Action urged to cut the fat of the land, The Guardian, Feb 15th 2001

Mintel (1998). 2010: Marketing to Tomorrows Consumer, Mintel International

Mintel (2001). Marketing to Singles. Mintel International

Mintel (2002). Impact of celebrity chefs on cooking habits, Mintel International
Mintel (2002). Frozen Ready Meals, Mintel International
Mintel (2002). Chilled Ready Meals, Mintel International

Office For National Statistics (2002). UK 2002,The Stationery Office

RSA (1999). Food experts reject retailers TV dinners, Focus on Food, RSA

Seth, Andrew and Randall,Geofrrey (1999). The Grocers, Kogan Page

Wynne, Amanda (1999). Obesity, British Nutritional Foundation

The Wrong Trousers:

A critical reflection on design and crime prevention

Mike Press is Professor of Design Research at Sheffield Hallam University, where he is head of the Art & Design Research Centre. He has directed research projects for the British Design Council and Crafts Council, has published and broadcast internationally.

Rachel Cooper is Professor of Design Management at the University of Salford. She has published four books in the field of design and over 100 papers, and has directed major design research projects. She is editor of The Design Journal, and founder of the European Academy of Design.

Caroline Davey PhD is Senior Research Fellow working within the Design and Innovation Group at the University of Salford. She has led major UK and European funded research projects on issues of equality, lifelong learning and competitiveness for SMEs.

Jo Heeley PhD is Senior Research Fellow working in the Design and Innovation Group at the University of Salford. A specialist within the field of eco-design, she has also led major industry and government funded projects on design innovation in textiles and creative thinking.

Andrew Wootton is Research Fellow in design at the University of Salford. He is a designer who undertakes research for the University's Design and Innovation Group, whilst maintaining his own Industrial, graphics and multimedia design consultancy business.

Text: Mike Press, Sheffield Hallom University, Rachel Cooper, University of Salford, Caroline Davey, University of Salford, Jo Heeley, University of Salford, Andrew Wootton, University of Salford

This paper is an analysis of the Design Against Crime project. Following a review of literature, research and initiatives in this field, the paper argues that while design and technology centred crime prevention strategies can be positive in reducing crime, there are some fundamental problems that they present. The paper draws on the first major case study research in this field to suggest the potential of design against crime. The paper concludes by presenting an alternative model of research and practice for design in this field. A new paradigm of crime reduction design is proposed that is based on a holistic understanding of crime, including its causes, methods and consequences.

Introduction - pants to crime
"*Gromit! It's the wrong trousers - and they've gone wrong*" Wallace to Gromit in 'The Wrong Trousers', Aardman Animations/BBC

Trousers and pants represent the new front line in the fight against hit and run drivers, paedophiles and rapists.

In the United States an inventor has taken the idea of smart trousers a step or two beyond the chichi. Embedded electronics in the trousers detect a collision between a motor vehicle and the wearer, communicating details of the incident to the police via a bluetooth belt buckle. It is proposed that this design idea, which is still at the concept stage, could reduce hit and run accidents (Half Bakery, 2002).

Meanwhile Philips Design is already prototyping its smart trousers. They have developed a range of garments for children where mobile phones and GPS technology are integrated with the clothes, thus enabling parents to pinpoint the location of their child and communicate using the mobile phone. "The added reassurance that technology like this might bring for parents is powerful and could even bring back to the cities a sense of childhood freedom that is fast becoming forgotten in a world increasingly concerned about the threat to children from kidnappers and paedophiles" (Design Council, 2002).

In South Korea one firm has its smart pants already in the shops. The Nice People Company designed and brought to market lingerie with an in-built alarm that is activated in the event of unwanted physical contact. The detailed case study that we have undertaken on this product shows how a range of design decisions were carefully made, ranging from the material used, through the alarm technology and deterrent styling. Bodyguard™ underwear was declared "Hit Product of 2000" in Korea and scooped first prize in the country's marketing awards.

Figure 1 - Bodyguard Underwear

Figure 2 - Design Against Crime publication - the Design Council

Since 1999, the authors have been commissioned by UK government departments to research and launch the Design Against Crime initiative. This project has involved:
- An initial scoping survey of the potential to develop design against crime in industry, the design consultancy sector and design education (Learmount, et al, 2000)
- A sector study of design against crime in the retail sector (Design Policy Partnership, 2001)
- The completion of thirty cross sectoral design against crime case studies (Design Council, 2002, Cooper (a) 2002 and Davey 2002)
- The development of teaching materials and organisation of project work competitions for design education at secondary and higher levels (Erol, 2000, Lewis, 2002)
- The provision of professional development activities for designers and published guidelines on design against crime (Design Policy Partnership, 2003)
- The development of a European design against crime network concerned with secure urban environments (funded by the EU Commission Hippokrates programme, 2001 and 2002).

The research and subsequent policy development work, has sought to demonstrate the value of design thinking, skills and expertise in contributing to crime reduction. In developing our work we are building on the strong theoretical and empirical foundations laid by those such as Pease and Ekblom, and indeed the latter has been a crucial mentor of our project.

Ekblom provides a clear definition of the scope of Design Against Crime: "(It) seeks to disrupt conjunctions of opportunity by making changes in the physical world and in the consequent perceptions of offenders... It hardens target objects or makes them less attractive; it reduces the usefulness of objects to facilitate crime... It reshapes environments to hinder and deter offenders and crime promoters, and aid crime preventers" (Ekblom, 1997, p.253). Commenting on the research based evidence from a variety of evaluation studies, Pease concludes: "Crime can and will be reduced by the intelligent redesign of the way things look and work" (Pease, 2002, p.16).

While we agree that design has a highly positive contribution to make in reducing crime, we have some severe problems with some design-centred approaches. It is not a question of whether or not it is "intelligent design", as the three examples cited

at the beginning of this paper all exhibit some interesting and innovative design thinking. We are not looking at dumb thinking here, far from it. Just wrong thinking. We need not reflect for long on the practical issues involved in hit and run, child abduction or sex crimes to conclude that these design propositions would neither prevent crime nor detect criminals. At best they would reduce the fear of crime on the part of the wearer, while at worst they would increase crime either through being targets for theft themselves or through the *Davy principle*.

Figure 3 - British mineworker with Davy lamp - circa 1950

The introduction of the Davy safety lamp into coal mines in Britain did not, as commonly supposed, lead to a reduction in mining fatalities caused by gas explosions. On the contrary, fatalities increased as the new innovation enabled mineworkers to work coal seams in more dangerous conditions than before. We have defined the *Davy principle* as follows: a change of behaviour following the introduction of innovations which are claimed to reduce risk, but which have associated with them actual risks that are significantly higher than perceived risks, thereby endangering their user. In short -

a reduced sense of fear can increase exposure to risk.

Design against crime (DAC) can therefore be based on wrong, misdirected or simply ill-informed thinking about criminal events or human behaviour. But we are not just talking about the occasional pair of wrong trousers. In promoting a highly politicised perspective of crime that has far reaching consequences for social , justice and civil liberties, DAC could become the technocratic haute couture in a hegemonic fashion of fortress thinking.

This paper has four key objectives:
1. To place DAC within its social, political and theoretical context.
2. To summarise some key conclusions from the research we have conducted and activities we have initiated.
3. To provide a critique of situational crime prevention strategies.
4. To propose the values and principles that further work in this field should be based upon.

We write this paper from the perspective of researchers who have been working for nearly four years in this field, and who have a high degree of commitment to the principle that design has a vital contribution to make in addressing social issues and problems such as crime.

Previously we have argued that "Design has always held within it a tension between idealism and social progress on the one hand, and the pragmatic concerns of market-led commercialism on the other - perspectives generally held to be mutually exclusive. DAC suggests that a new accommodation can be found between them" (Cooper (a) p.330). This paper develops this position further. We now suggest that this "new accommodation" must be based on a more coherent and explicit articulation of design's social vision and values.

Much of this argument is far from fully formed, requiring further refinement. But, in the words of Henrik Ibsen: "One should never put on one's best trousers to go out to battle for freedom and truth".

Crime prevention - a case for treatment

"An eye for an eye, I say. If someone hits you you hit back, do you not? Why then should not the state, very severely hit by you brutal hooligans, not hit back also? But the new view is to say no. The new view is that we turn the bad into the good. All of which seems grossly unjust."
Anthony Burgess, A Clockwork Orange, Penguin Edition 1972, p.74

At the risk of considerable generalization, much of the history of crime prevention in the twentieth century concerns the quest for effective and reliable alternatives to punishment and policing, neither of which appeared to have much impact on levels of crime, and both of which consume considerable resources. A marked rise in crime during the period of post-war affluence led to a number of different approaches being explored.

Rehabilitation is based on the assumption that 'the criminal' can be identified, treated in much the same way as a medical patient, and be sent out back into society as a 'cured' individual. The emphasis in criminology was on identifying the scientifically measurable factors in an individual that led to criminality, such as the nature of family relationships, etc. Psychological treatment was one essential part of rehabilitation, which was also expressed institutionally in the emergence of the correctional sector.

Community development was another side of the rehabilitation coin, in this case dealing with issues of group pathology that cause crime. In the United Kingdom, the idea of community development was embraced within the post-war Welfareism. Implicit within the idea of the welfare state was that through the maintenance of full employment, public housing, free health care and education, and social services targeted at 'problem' or vulnerable individuals and communities, then crime would be reduced. Such positivist approaches to crime prevention have

gained a high profile, both through liberal critiques such as Burgess's Clockwork Orange, and right wing critiques that favour short, shark shocks to the 'nanny state'.

Figure 4 - Still from the motion picture Clockwork Orange

The approaches above place the emphasis on seeking to understand and then deal with *criminality* - in other words a behavioural emphasis on the psychological motivations and social conditions that lead an individual to undertake a criminal act. From the 1970s three theoretical approaches emerged which placed the emphasis - not on criminality, but on *crime*. Situational crime prevention places its emphasis on understanding the dynamics and conditions - human and environmental - around the crime event. Within criminology this broad approach has become highly influential.

Young (1994) described this situational approach as 'administrative criminology' given its pragmatic focus and its firm research based within the UK state's White-hall enclave. Hughes characterises the 'administrative' position as "the search for causes is futile, but the opportunities to commit crime can be controlled" (Hughes, 1998, p.59). According to Clarke, SCP "refers to a pre-emptive approach that relies, not on improving society or its institutions, but simply on reducing the opportunities for crime" (Clarke, 1992, p.4). In part at least there is a fatalism (or perhaps realism, depending on your viewpoint) at work here - the causes of crime are either irrelevant or impossible to deal with. The emphasis now shifts to reducing the

opportunities for crime to occur.

The whole approach of SCP rests on one key article of faith: a rationalist view of crime. The rational choice perspective of crime goes something like this: a criminal offence occurs after the offender has weighed up pain versus gain and assesses that, on balance, the offence is worth the risk. Crime is committed by the head not the heart and involves rational decision-making. So, if rational choice is at work, and most crime takes place on the spur of the moment, then simply reducing criminal opportunity can reduce crime. That is the key assumption and driver for SCP, which is applied in four broad ways:

1. Increasing the perceived difficulty of crime
2. Increasing the perceived risks of crime
3. Reducing the anticipated rewards of crime
4. Removing excuses for crime

The evidence appears to support the broad approach of SCP. Pease, Ekblom, Clarke and others all cite studies that provide clear evidence of the efficacy of SCP methods. One particular issue that supports SCP is *displacement*. If opportunity plays little or no role in crime, then attempts to reduce criminal opportunity in one location will merely displace crime to another. As Pease explains "all the careful reviews of this have shown that, while some displacement does occur, in no properly researched case does it happen on such a scale as to offset the crime reduction effect completely" (Pease, 2002, p.17).

Design against crime

"Too often, new products and services provide new opportunities for criminals. Good design should tackle potential causes of crime at the earliest stage." Right Hon David Blunkett, MP - UK Government Home Secretary

Design against crime (DAC) is the application of SCP assumptions, strategies and knowledge to the concerns, methods and processes of design. Since the 1980s the predominant focus for much of this has been environmental design and target hardening.

Secured By Design (SBD) is a national police initiative and award scheme in the UK to promote the use of crime prevention measures at the development stage, covering both design and physical security, and has been applied particularly to the design of housing projects. SBD demonstrates clearly how theories of criminal behaviour can be applied to the design process.

Three crucial principles contribute to a criminal event such as burglary: (i) anonymity (ii) lack of surveillance; and (iii) the presence of access opportunities. Offenders find greater opportunity in areas where they are unlikely to be noticed, recognised or challenged. Anonymity increases and informal social control reduces as space becomes more public, open and accessible. People expect to see strangers in public space, so offenders, become safely anonymous as they merge with the wider public. It is highly damaging if poorly overlooked, anonymous space is linked to routes that provide access to houses - particularly at the rear of properties. Space within the residential environment can be fully public or completely private. Individuals tend to exercise a high degree of influence over private space, but this diminishes rapidly as space moves towards the semi-public and fully public end of the spectrum. Increasing residents' influence over their environment and reducing anonymity is achieved by creating clearly defined defensible space, organised and designed to allow and encourage community influence, ownership and informal social control. Designing out opportunities for crime also requires the creation of effective natural surveillance and, crucially, the careful design of access and escape opportunities.

While environmental design has dealt with the complexities of designing subtle

psychological messages into housing estates to increase both the difficulties and the risks of crime, the task for industrial design has been more straightforward - harden the target. In commercial terms, the automotive sector has been significant in this approach, despite its initial great reluctance. According to recorded crime figures, car crime increased steadily from 1979 to a peak in 1992, and has since been reducing at a reasonably steady rate. Currently the figures are at their lowest levels since 1989. Much of this decline has been attributed to the increased security now being designed into new vehicles, such as alarms, immobilizers and tracking systems (see Learmount et al).

However, it is only relatively recently that design against crime has been seen as going beyond secure housing estates and car alarms. Serious attention is now turning to design's broader potential, both in the UK and in Australia which has coined yet another term for it: "*Crime reduction through product design* (CRPD) involves integrating protective features into products in order to reduce their potential to become targets of criminal activity (such as theft, fraud and damage), as well as preventing their use as instruments of crime. The term 'product' encompasses any physical property and forms of currency, as well as electronic information and computer software" (Lester, 2001).

The challenge to the design community is to quickly acquire and apply a knowledge base that is appropriate for designing against crime, from which methods and strategies can be developed as successful as SBD and other initiatives in environmental design. In pursuit of this, Ekblom has provided designers with a conceptual framework to understand criminal events and the potential of design strategies (Ekblom 2001). Using this framework we can illustrate how design can be used as an active ingredient in design prevention, the framework not only illustrates the designer's role in developing situational solutions but also in inhibiting the criminals ability and propensity to commit a crime.

We have adapted his original model which is presented in Figure 5 in terms of two broad strategies designers can adopt concerning crime. Passive design, on the left essentially ignores the crime dimension for a product or system. The various attributes of both the situation and the offender can create a criminal event, with regard to the product. Passive design is the main strategy employed by designers in terms of crime. Active design acknowledges the existence of the situation and offender attributes, but also recognises that each is associated with a specific design strategy. Active design goes beyond target hardening, and indeed goes beyond the traditional concerns of SCP. Design can and should be applied to issues concerned with the predisposition of offenders to commit crimes and to the conditions which can leave individuals with no alternative but to become criminal offenders.

It is our contention that *Active Design* offers a far more effective means of considering how design can address issues of crime prevention that the other two alternatives, namely *Passive Design* (do nothing - crime prevention is of no concern to design) or conventional SCP (design against crime situations, but do not engage with the social issues that cause crime in the first place).

Our commitment to the Active Design model has been strengthened by the thirty design against crime case studies we have undertaken in the UK, United States, Sweden and South Korea. The case studies sought to identify and examine examples of best practice across all design disciplines. The triggers, methods, outcomes and lessons of each case study were identified and discussed. (The Design Council published a selection of these case studies in summary form in 2002. These shortened, selected cases are available along with the complete full versions from our website: www.designagainstcrime.org).
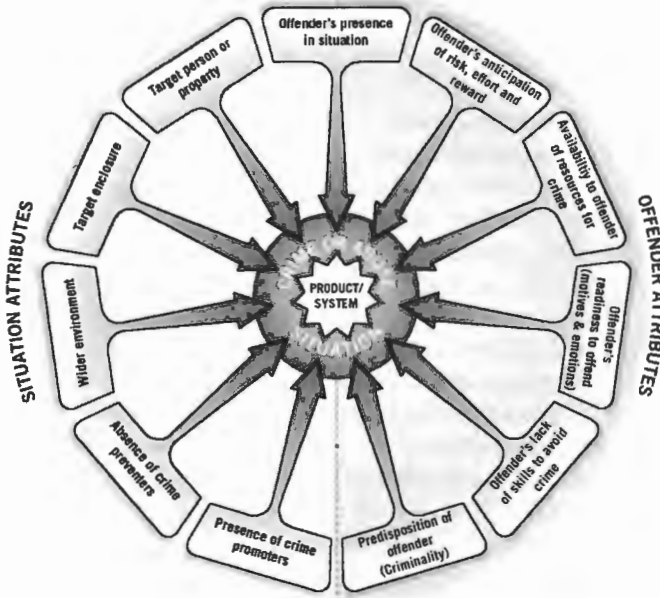
PASSIVE DESIGN

Figure 5 -
Passive vs Active Design
(adapted from Ekblom 2001)
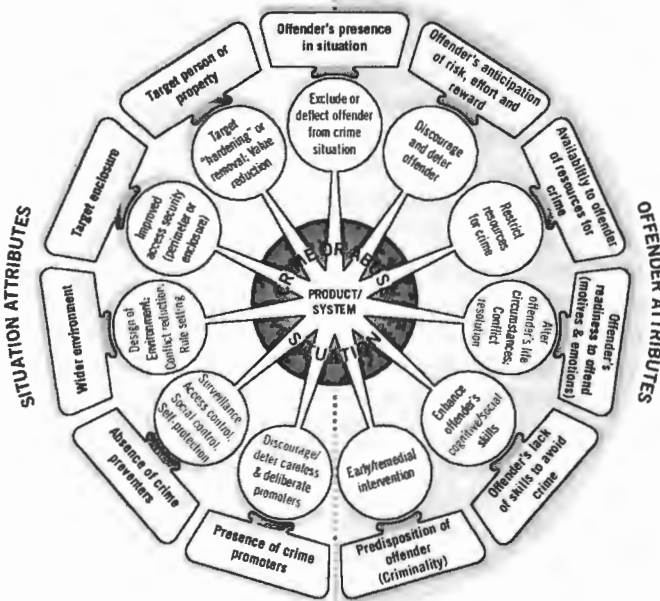
ACTIVE DESIGN

We can propose a broad typology into which most of our cases can be placed:

Market driven

Virtually all of our industrial and fashion design cases fall into this category. The trigger is to gain competitive advantage by developing a product which appears to afford the consumer some protection from crime. Generally there is at least some research into crime issues, but the main emphasis is on technological research and innovation applied in a new product that uses fear of crime as a marketing strategy. While there is evidence that some of these cases gain considerable market share, there is little if any evidence that there is any consequent reduction in crime.(Figure 7)

Security driven

These are cases involving or driven by the security industry and are largely about target hardening and gaining a competitive advantage. Generally very effective examples of target hardening in retail or other commercial contexts. (Figure 8)

Personally driven

AlphaBar and Parksafe are examples of cases that are triggered by personal experience or commitment to designing against crime. The degree of crime knowledge that informs the cases is high, and the outcomes are successful in terms of both crime and commerce. (Figure 9)
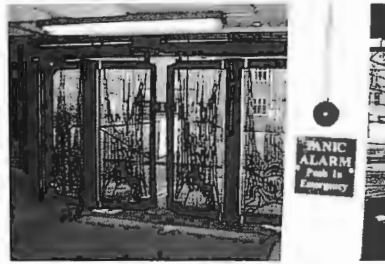

Fortress city driven

Two of our architecture cases concern apartment blocks which typify the move towards 'fortress living' - highly protected environments with an emphasis on high security. (Figure 10)

Community centred

Many of our architecture, environment cases, and even our graphic design case are community centred. They either are triggered by, or actively involve communities, interest groups or other stakeholders. They are, for the most part, setting out to deal with a specific set of crime problems, and are highly informed by crime and design thinking on these issues. They are also the most successful cases in terms of crime reduction. (See Figure 11)

Figure 7 - Example: Sears DieHard car battery

Figure 8 - Example Tamperproof packaging for Dulux paint

Figure 9 - Example Parksafe car park, Derby

Figure 10 - Example Urban Splash apartments, Manchester

Figure 11 - Example
Hulme Park, Manchester

The market driven and fortress city driven cases are perhaps the most problematic. We are certainly not suggesting that gaining competitive advantage from developing products that are claimed to have crime reducing qualities is somehow wrong. On the contrary, in a market economy, such innovations are essential. Our problem is that, on current evidence at least, most examples of such innovation are either marketing conceits or offer well-considered protection to those who can afford it.

Overcoming this difficulty demands that we first consider some of the problems that lie at the very heart of design against crime in terms of the values that gave rise to it and which, to an extent, it reinforces.

Privatising law and order

"Laws grind the poor, and rich men rule the law."
Oliver Goldsmith, The Traveller

The inexorable rise of Situational Crime Prevention (SCP) since its emergence in the 1970s to its position today as the dominant paradigm of crime prevention can be accounted for in part by the failures of the approaches that preceded it or by the difficulties in assessing their effectiveness. Most SCP initiatives benefit from the relative ease by which they can be evaluated - for example, install the CCTV camera, measure the crime rate afterwards and compare it with before. In contrast, community development is a more complex idea with outcomes that are less amenable to quantitative analysis.

But perhaps more than anything else, SCP was right for its political time. An approach to crime prevention that was, not concerned with social causes of crime or of "improving society" (Clarke) and placed the emphasis on the rationality of the individual harmonised well with political leaders, such as Thatcher, who claimed that "there is no such thing as society" and elevated individual responsibility to a political mantra.

Crime prevention is politically determined (self-evident perhaps, but in these de-politicised times it is always worth restating). A recent study of the politics of crime prevention in the UK, based on archival and interview research, argued that the research of the Home Office, from which SCP was developed, directly reflected the ideology of the governing right wing party: "Their findings are consistent with Conservative party ideology whose emphasis was on police, prisons and stiffer sentences. Their focus was on 'individual responsibility' and opportunity reduction, as opposed to tackling the social-economic factors associated with crime" (Koch, p.178).

Let us be clear - we are not arguing that SCP is an explicitly political project developed by Thatcherite zealots working at the Home Office. Rather, the case is being made that SCP rose to prominence due to its consistency with many political values that were dominant at that time. However, there may be some validity in the argument made by Young that SCP's emphasis on targets and situations actively encouraged government policies which chose to ignore social problems such as unemployment and poor housing (Young, 1994, p.95).

Others have argued that SCP places an

emphasis on street crime - and generally other crimes in the public environment - with much less attention paid to domestic violence, child abuse, state crime, corporate crime and other crimes which take place behind closed doors. Again, it can be argued that this is consistent with a particular political perspective of crime. But while its focus has been on crimes in the 'public' domain, the consequences of SCP have been to 'privatise' crime prevention, and indeed law and order.

To acknowledge that we all have responsibilities for crime prevention is an essential principle of citizenship. It is incumbent upon us to remove valuables from our cars, to secure our houses, to attend to any cries for help - that is all part and parcel of being a responsible citizen. However, SCP and the burgeoning security industry is providing the means by which some people can buy their way into a fortress lifestyle which has the consequences of segregating communities, privatising public environments and undermining civil liberties.

In the United Kingdom, the recent government Foresight report on crime prevention highlighted the advantages of science and technology being harnessed to tackle crime: "The development and deployment of (technology) will offer UK business and society new opportunities and greater security... We would expect this result in ideas being turned into marketable products in the short to medium term" (Foresight, p.14). A recent programme of research initiated by the Engineering and Physical Science Research Council placed similar emphasis on the commercial advantages of developing crime prevention and detection technologies.

Again, we emphasise that we have no objection in principle to commercially motivated research in this field. However, like the development, for example, of medical innovations, the ethical implications and practical consequences need to be considered. Questions such as the following need to be asked:

- Is protection only afforded to those who can afford to pay?
- Does it encourage a segregated, 'fortress' approach to living?
- Is the innovation driven primarily by an understanding of crime, or by a means of securing competitive advantage?
- Does the innovation reinforce existing inadequacies in our system of law and order?

Design, technology and innovation is *not* neutral. Its development reflects and reinforces political and social values. The huge danger we currently face is that design and technology aggravate the current inadequacies and inequities of the Criminal Justice System. As Norris and Armstrong have argued, CCTV is far from a neutral technology that deters and can aid detection. The use of this technology depends wholly on the prejudices and selectivity of CCTV operators, and indeed may well be amplifying discriminatory policing.

We are all aware of the crisis in the Criminal Justice System, the failure of social reform to address some fundamental causes of crime, and the increasingly fragmented nature of our communities, which instils both fear of crime by some and anger by other at injustice and prejudice. And post 9/11 many of us are looking for effective solutions to detect and disarm terrorism. In such a context, we may rush towards design and technology as a 'scientific' solution to the problem of crime. We would be very wrong.

A question of values

We are committed to the idea that design and designers have considerable and unique potential to contribute to crime reduction. This is demonstrated by a number of the case studies we have referred to here, and some project work undertaken by design students that we have not discussed, but which can be viewed on our project website. A broader, more inclusive perspective of design that is

informed by social awareness and responsibility is beginning to demonstrate how design can usefully address problems such as domestic violence, that critics of SCP suggest is beyond its scope.

However, equally we are of the view that design thinking which is divorced from critical social engagement and a reflexive view of citizenship, and which has a tenuous link with the knowledge base on design and crime will result in solutions which at best offer some benefits to a small number of people in only certain conditions, and at worst are cynical exercises in marketing which use the fear of crime to peddle worthless or sometimes dangerous products - wrong trousers.

If Design Against Crime is to fulfil its positive potential, and overcome its current shortcomings, then it must identify a knowledge and values base to inform future work in this field. This could form the basis of a programme of professional development, or indeed inform the development of graduate studies in design. Figure 12 presents our proposition.

Figure 12 - Design Against Crime Knowledge and Values Base

The future development of design against crime must be informed by four key areas - each of which provides necessary specialist knowledge and which furthers a set of positive and clear values that should underpin design practice. Designers cannot seriously address crime problems if they do not understand society and the individual: the factors that underpin human behaviour, the dynamics within communities, the issues of social order and control, and the distinctive nature of multicultural social systems. Similarly, they must be informed by knowledge of crime science: how crime and criminology is defined socially and politically, the research that has been undertaken into crime and crime events, and the various issues concerning our legal and policing systems. A critical understanding of design strategies is clearly essential, pulling out from the

extensive practical work done in this field the theoretical and practical implications. And finally, underpinning all this, is an engagement with the issues of citizenship, and indeed the ethics of design practice, to encourage reflexive rather than technocratic design practice.

The danger is outside: in the training camps of AlQaida. And it is inside: somewhere within our Muslim communities. The danger is hidden: in paedophile chat rooms. The danger is walking just two steps behind us: about to steal our mobile phone. Welcome to the risk society. The key problem of living in an age when fear and security are dominant issues is two fold: having fear eclipse ethical values, and having faith that dependable solutions will be found in science and technology. High tech pants to stop rape is an idea as risible and ethically bankrupt as that of cruise missiles to Baghdad to stop international terrorism.

The only way forward, the only realistic strategy is a human one: understanding people, their hopes, their fears, their immense strengths, their human weaknesses and working with them to pursue inclusive human values based on social justice and cultural tolerance. On that foundation - and only on that foundation - can we truly design against crime.

Bibliography

R Armitage (2000) An evaluation of Secured by Design Housing within West Yorkshire, Home Office Briefing Note 7/00

Ronald V Clarke (1999) Hot Products: Understanding, Anticipating and Reducing Demand for Stolen Goods, Police Research Series Paper 112. London: Home Office

R V Clarke (2000) The theory of crime prevention through environmental design

R. Cooper, C. Davey and M Press (2002) Design against crime: methods and issues that link product innovation to social policy, International Journal of New Product Development & Innovation Management, vol 3, no 4, pp 329-342

C Davey, R Cooper, E Olson, M Press and A Wooton (2002) Design against crime: socially responsible design', proceedings of the 11th International Conference of Design Management Education and Research, Boston, USA, June 9-11

Design Council (2002) Design against crime: evidence, Design Council, London

Design Policy Partnership (2001) Off the shelf: design and retail crime, Report for the Design Council; available from www.designagainstcrime.org

Design Policy Partnership (2003) Guidelines for professional designers, report for the Design Council; available from www.designagainstcrime.org

P Ekblom (1997) Gearing up against crime: a dynamic framework to help designers keep up with the adaptive criminal in a changing world. International Journal of Risk, Security and Crime Prevention 2(4): 249-265

P Ekblom (1999) Can We Make Crime Prevention Adaptive by Learning from Other Evolutionary Struggles? Studies on Crime and Crime Prevention, 1999, Vol. 8 No.1: 27-51. Stockholm, Sweden: National Council for Crime Prevention.

R. Erol, R. Cooper, M. Press and M. Thomas (2000) Design Against Crime: awareness in design education, IDATER 2000 (Proceedings of the International Conference on Design and Technology Educational Research and Curriculum Development) Eds: P H Roberts & E W L Norman, Loughborough University, August 2000

Foresight Crime Prevention Panel (2001) Turning the corner, London: HMSO

Half Bakery (2002) http://www.halfbakery.com/idea/Hit_and_run_prevention/ accessed: 12/11/2002

G Hughes (1998) Understanding crime prevention: social control, risk and late modernity, Buckingham: Open University Press

D. Indermaur (1999) Situational Prevention of Violent Crime: Theory and Practice in Australia, Studies on Crime and Crime Prevention, 8, 1, 1999, 71-87

B C M Koch (1998) The politics of crime prevention, Aldershot: Ashgate.

S Learmount, M. Press and R. Cooper (2000) Design against crime, Report for the Design Council, Home Office and Department of Trade and Industry, extracts available from www.designagainstcrime.org

A Lester (2001) Crime reduction though product design, Australian Institute of Criminology

O Newman (1972) Defensible space: people and design in the violent city, London: Architectural Press

O Newman (1996) Creating Defensible Space, U.S. Department of Housing and Urban Development Office of Policy Development and Research April 1996

K Pease (2002) Cracking crime through design, Design Council, London

J Young (1994) Incessant chatter: recent paradigms in criminology, in M Maguire, R Morgan and R Reiner (eds) Oxford Handbook of Criminology, Oxford: Clarendon Press

The dysfunctionality of everyday things

On stress, design and artefacts

Text: Sara Ilstedt

This paper addresses the increasing issue of stress and burnout in contemporary society and attempts to connect this to product design. Stress can be defined as the reaction of a mismatch between the demands of the world and the needs and capacities of the individual. To what degree does technological products and design artefacts contribute to stress? Research shows that software that is unintelligible and difficult to use increase stress in users. But what are the criteria to be used when we design and evaluate products? The paper presents a survey on the relation between stress, relaxation and products. The answers are categorised and conclusions drawn about when and why artefacts stress us. How people cope with life reminds to a large extend on how they cope with products. Health sociologist Antonovsky has developed concepts for evaluating people's abilities to handle the strains of life, which he calls the "Sense of Coherence". The paper argues that this can be applied on products to give guidelines on why products

stress us, and to create an understanding of how design can be used to increase relaxation. A special emphasis is placed on Antonovsky's concept Meaningfulness and how this applies in product design.

Keywords: Stress, Health, Product Design, Meaning, Aesthetics

In Sweden spring 2002, the cost for health insurance is increasing with 25 million SEK (250 000 dollar) every single day. 33% of those health problems are caused by stress. Stress generates insomnia, weakens the immune system, increases the blood's ability to coagulate, increases the disruption of cortisol and adrenalin in the blood and gives rise, in turn, to a whole lot of stress related illnesses like stroke, insomnia, gastric ulcer, depression, back troubles and fatigue. Consequently, on the top list of medical prescriptions are sleeping pills, anti-depressives and sedatives, medicals that are related to stress and mental problems. These are indeed alarming figures

Sara Ilstedt Hjelm,
Interactive Institute/CID, KTH,
Box 240 81, 104 50 Stockholm
sara.ilstedt@tii.se

Sara Ilstedt Hjelm received a MFA in Industrial design from Konstfack in Stockholm in 1991 and has been working as a consultant within industrial design, user interfaces and graphic design. She has developed and was head of the Design Engineer program ot University college in Skövde as well as project leader for the educotion Material and Virtual Design ot K3, Molmö University. She has published extensively in Design and Cultural magazines and has contributed to severol books ond exhibition catalogues. She is currently pursuing a PhD in Human Machine Interaction at the Royol Technicol University (KTH) and works at Interactive Institute in Stockholm where she hos been in the team that developed the oword winning relaxotion game "Brainball". Right now Sora Ilstedt Hjelm has focused on her research in design theory, interaction and health.

and I am sure that most of you recognize some of those problems, even in your own life.

A general description of stress is when the demands of life don't match the capabilities and needs of the individual. When this happens, the person increases the mental and physical capacities as to adapt to this situation. The Canadian researcher Hans Seyle was the first person to talk about stress on biological systems in the 1930's. He called this initial reaction the *general adaptation syndrome*. The body makes itself ready for fight, escape or conflict, the heart rate and blood pressure increases and the muscles get tensed. But in most modern lives, problems are not easily solved by fight or flight and the high levels of adrenalin are of no use. Instead of solving the problem they make you sleep bad that night. This initial stress reaction passes by if the stressors disappear, but if we are faced with another threat it returns. Stress can be one of a kind event like a sudden death of a relative or it can be small, a constant friction that wear's us out over a long time. Our reactions at stress are developed to create opportunities to mobilise resources so that the individual will survive in a short term. This means that systems that are not important for our immediate survival will be disconnected, which does not harm us immediately, but might have serious consequences in the long run. A continuous stress condition affects the neuro-chemical balance in the brain that changes the size and ability of the brain cells. The Swedish physician Doctare [2] call this phenomenon Brain stress. Doctare has for a long time been working with war victims that suffer from Post Traumatic Stress Disorder, PTSD, and claims that it is essentially the same syndromes we see in stressed people in Sweden. After the initial reaction of energy mobilisation, comes a second phase called a *chronic* stress reaction. It appears after a prolonged or superior threat, when we see no way out. The body focuses on the survival of vital

body organs. The heart beats slower, the blood leaves the limbs and muscles and centres in the inner organs. We get tired, cold, loses appetite and the muscles get tensed. If this state continues it can be developed to a state of chronic depression or burnout. Both depression and burnout are reactions to prolonged stress. Every other woman and every fourth man will, sometime in their lives, suffer from depression. The World Health Organisation (WHO) believes that depression, in addition to smoking, are the greatest health problems in the 20th Century and that depression will probably be the main cause of work related and functional disabilities amongst adults. [5]

Burnout is a kind of exhaustion depression caused by too much work and pressure over a long time and generally found within slimmed organisations in the Healthcare or IT sector. Since burnout was made an official diagnose in Swedish medical care in 1998, the amount of people with burnout have increased with 300% each year A recent study made on 67 Swedish women with burnout symptom [8] claims that stress gives the same brain damages as stroke. The central nerve systems is affected which substantially limits the brains normal ability to learn, remember and handle new information. These women describe that they can't make the simplest decision or remember anything new for even a short time. The course proceeds with increasing emotional reactions, chronic fear, anxiety, fatigue and a range of body symptoms. The writers conclude that we need to adapt working places for our brains as well as for our bodies. Work should be judged and adjusted to brain ergonomics to prevent cognitive overload.

There are many reasons for stress; some of them have to do with working conditions, some with the private life. Surely the reasons for stress are as complex and difficult to cope with as modern life and intrinsically a part of it. But something modern lives are full of, both at work and at home, are products.

Design and stress

In his book *The design of everyday things*, Donald Norman [6] describes an event when he is in his room talking to a student. The telephone in his room starts to ring but he wants to finish his sentence before he answers the call. Then the ringing stops. Norman waits for the call to be transferred to his secretary, and hear the phone start ringing in her room. Then he realizes that it is past working hours. He rushes to her room to catch the call, but the phone is quiet. It has been transferred again and he hears the telephone ring in the room next door. The door is looked and Norman rushes back to get the key but is of course too late. He hears the telephone start ringing down the hall. Was that still his call, mysteriously wandering a predetermined path in the building? How often do new technological systems really solve problem instead of creating new ones?

In a study I made at the Swedish tax administration I noticed that all the operators had post-it notes on a particular place on the receiving unit. Beneath that post-it note was the number of waiting incoming calls. When the number reached over a hundred (which it usually did) it was too stressful to watch, as the operators explained.

In a small company, of 50 employees, that worked up sheet metal, the production flow was very graspable and the amount of products few. When the IT system SAP/r3 was introduced on demands from a large customer 7,5 new people had to be employed to make the system work in production. Head of the engineering workshop and responsible for education of the system says: " *I used to tell the members: Don't try to understand what you are doing. Just learn the commands and screens that are used, otherwise you go crazy*". [11]

A product that do not work, or works in a way that is not in tune with how we live, causes stress. A buggy program, a lost key card or an unloaded battery to a cellular phone, are examples of things that can be irritating and stressful. Taken one by one, these problems are manageable. But products do not come one by one, they come in herds. They invade our lives, homes, and cities. An average person has 2 000 objects in their home. All together they form the basic scenery of contemporary lives and societies.

Imagine a normal day in your life. How you wake up by the clock radio, get up take a shower, get dressed and make breakfast. You take the subway or the car to work, park it, get into your office and turn the computer on. How many products have you encountered so far in the first two hours in the day? Hundred? Two hundred? A thousand? And how many of these existed 100 years ago?

It might be difficult to answer but I think that we got the picture. We are surrounded by enormous amounts of products and most of these are very young compared to the age of human mind and culture. Is it not reasonable to think that this amount of products may in some way affect us? That they in fact create a basic stress level that constantly nag our adrenalin reserves and that makes us less resistant towards stress?

A questionnaire: stress and relaxation

In order to better understand the relation between stress and artefacts I made a questionnaire. The goal was to see what made people stressed and what made them relaxed as well as what products were stressing and relaxing. Is there a connection between stressing situations and products? Which kind of products are stressing and which are relaxing?

The questionnaire was sent out to two organisations, one health centre in north of Stockholm and one big consultancy in IT-design and media, with several offices in the country. Most of the surveys were sent out and answered on email; some were distributed by hand and returned anonymously in a letterbox. About 40%

of the employees answered, in total 43 people, 24 women and 19 men in the ages between 27 and 59.

After the background data (age, sex, profession) came four questions, two concerning stress and two concerning relaxation. The questions where to be answered on a blank space, were the respondents were free to make remarks or describe situations. There were no boxes with pre-decided answers to be filled in. This means that coherency in answers have a higher significance than in surveys with prewritten answers.

Despite the free modes of answering these were generally very coherent and it was easy to see the large pattern. By further analyses the answers could be organized into larger groups.

On first question "What makes you stressed?" the most common answer was:
a) **Too much to do:** Too many emails, commitments, phone calls, meetings and projects.
b) Lack of control, powerlessness: techno-logy that docs not work, computers, software, servers, unclear organisations, misunderstandings, delayed trains, other people. Spending a lot of time trying to fix these things with no success.
c) **Disturbing audial and visual** environments: cell phones that ring during meetings and concentrated work, piles of papers, messy environment, irritating sound environments; printers, sound interfaces; things that do not fit in or can not be mended.

The next question was about what *artefacts* that cause stress.

Number one on the list comes compu-ters and telephones. Other annoying artefacts that were mentioned several ti-mes are servers, printers, vacuum cleaners, cords, cars, car queues, alarm clocks and bills. Disturbing sound environments, things that are sorted but do not "fit in" anywhere; half important papers like in-formation about ones pension or things that are broken and can not be mended.

The third question was: What makes you relaxed? The answers on this were even more coherent then in the questions about stress. By far the most relaxing activity is listening to music, which was mentioned by half of the subjects.
a) **Calming** activities: Sleeping, bathing, lying down, drinking alcohol, quiet and peace
b) **Enjoyable activities without clear goal:** Listening to music, walking, being in nature, gardening, cooking, watching movies, sports, yoga, being with friends and family
c) **Activities that gives (a sense of) control:** clean the desk, make what to do lists, finish jobs, back ups, sorting papers in folders, doing familiar things with well known objects, reading the morning paper. Repairing things. Having just enough to do.

The *artefacts* associated with relaxation were related to these themes mentioned above. Music was highest scored, followed by hot baths, beds and sofas, books, candles, musical instruments and kitchen tools. Cups with hot liquid, nice pictures; photos and a clean flat also made you feel good. Beautiful and functional things were mentioned, special glassware, a gardening tool or a familiar painting. Some people felt relaxed by survival kits, manuals, fire detectors, tools and extra batteries. One person mentioned his four year old server that enabled him to get hold of old files wherever he was in the world.

Differences between men and women were rather small. Women were more stressed by loosing control or of feeling powerless then men were. Men on the ot-her hand were more stressed by *other* peo-ple that were too slow, incapable, disrespectful or incompetent. More women mentioned problems to combine family with work.

It was no significant difference between the working places or different tasks

except for one: all the secretaries, (three) were stressed by people that complain and whine about things that can not be changed.

Coping strategies

In psychology, the way we deal with the strains of life are called coping strategies [3]. The way we handle products has a lot in common with how we handle life.

Coping strategies can be successful, which means that the troubles are dealt with and disappear or they can be less successful, the problems stay or get worse. Coping is a process that includes both problem solving and emotional reactions. Problem solving could be to take measures in order to influence or change the situation. The emotional reaction might be a defence reaction in order to handle a difficult situation or a direct reaction to the emotion. The most stressful situation is when you experience that you can not do anything; this is when many people are stroked by panic anxiety. Another useful concept from psychology is Locus of Control (LOC). It means to what degree a person experience that she/he is responsible for what happens or whether it is outside his/her own control or understanding. To be able to control or influence one's own situation is crucial for mental well being. This is similar to the experiences reported about in the questionnaire above. The most stressing situations are the one's where you have no control or power to influence. Products that malfunction, a train that is delayed or telephones that keeps ringing.

In a report by the Swedish institute for Medical Evaluation (SBU) [10], 499 studies on treatments for depressions have been classified and evaluated. Through the large quantity of studies some general deductions can be made. The treatment with best result and longest lasting effect, was cognitive therapy where the patients learned new coping strategies. To summarize, these included strategies to help people to cope with feelings of meaning-lessness, enhance feelings of control over one's life and finding strategies to handle the disease and its consequences.

Other effective treatments are Psychotherapy and light physical activity, for example walks in nature. Studies show that a mild depression gets better if the person takes a walk, three to four times a week for about one hour. Nature has a healing influence on stress, depression and general rehabilitation. It is also clear that people like to do things that they are good at and feel that they control. We enjoy our work because we are skilled at it and it gives us self-esteem to know that we can handle a difficult situation. Learning to master something new can also be tremendously rewarding. I think that everybody clearly remembers managing to cycle for the first time in their life.

Coping strategies are usually looked at from a psychological point of view. But life has to a larger extent come to include the handling of technology and products. What are the coping strategies for technology? How much control do we have on the products that we use and live with?

Sense of Coherence

The increasing unhealth in society is a cause of alarm but how do we define health? United Nation's definition of health is "A state of physical, mental and social well-being". Health sociologist Aaron Antonovsky [1] claims that with such a definition of health, everybody is ill. Health becomes equal to perfection, to the absence of any strains in life - and life, says Antonovsky includes inevitably adversities. Health and unhealth cannot be regarded as dichotomies but as a continuum where we are in constant movement from one side to another.

A patogenetic view looks for causes for the disease, whether it is bacteria, psychosocial or chemical factors. The salutogenetic view, advocated by Antonovsky, is interested in health and what can keep us healthy. Instead of focusing on the stressors we should think in terms of what

keeps us moving towards the healthy side of the continuum.

When Antonovsky studied survivors from concentration camps he found that almost all of them suffered from Post Traumatic Stress Disorder. But the surprising thing was that some of them did not. They even regarded themselves as happy. This made Antonovsky become interested in why some people seem to be able to go through terrible hardships in life and stay well. Life is always full of strains, what is it that makes some people survive while others break down?

Antonovsky made several deep interviews and after years of research he could see a pattern consisting of three factors that he called Sense of Coherence. To optimise the chances of successful coping with a stressor, one must believe (1) that one understands the problem; (2) that one has at one's disposal the resources that are needed; and (3) one must wish to cope with the problem.

Comprehensibility - refers to the extent to which one perceives the stimuli that confront one, deriving from the internal and external environments, as making cognitive sense, as information that is ordered, consistent, structured and clear. Rather than as noise - chaotic, random, accidental, and inexplicable.

Manageability - the extent to which one perceives that resources are at one's disposal which are adequate to meet the demands posed by the stimuli that bombard one. If one has a high sense of manageability, one will not feel victimized by events or feel that life treats one unfairly.

Meaningfulness - the extent to which one feels that life makes sense emotionally. That at least some of the demands posed by life are worth investing energy in, are worthy of commitment and engagement.

Of these three concepts meaningfulness is the most important. You can go through almost anything if you feel that it is meaningful and that it will lead to something good in the end, something

that is of emotional value for you. So a situation can be both impossible to understand and manage - as long as it is meaningful you can still survive. The other way around, a life that is easy to grasp and handle, but low on meaning, usually has a direction towards ill health. If you don't wish to solve the problems that come up, the negative spiral begins. The first sign of a beginning depression or burnout is usually that everything seems meaningless.

Comprehensible, Manageable and Meaningful

It is striking how well Antonovsky's concepts are applicable on our world of products. If we make a slight shift in focus of The Sense of Coherence towards artefacts this is how it reads; We optimise our chances for a successful interaction with an artefact if we believe that (1) we can *understand* the product; (2) that we have at our disposal the *resources* that are needed to handle it; and (3) if we wish to cope *with* the product.

Objects and places need to be Comprehensible, that is, you should *understand* what they are and how they work. It should not be any doubts about the entrance to a building or how to turn the tape-recorder on. Products should appear coherent, structured, and logical and their function should be analogous to their appearance. If you perceive a product as logical and clear it is usually easy for you to find out how to use it. Something is *not* comprehensible when it appears chaotic, random, accidental or inexplicable. A product with high Comprehensibility supports understanding and makes it easy to remember how to use the product.

Manageability is about how you *handle* products. Objects have to be *Manageable* in the sense that you should know what to do to reach your goal, whether it concerns finding your way in the subway or sending a fax. If you don't know how to handle it, the information should be easy to acquire and understand. An important

aspect of Manageability is customisation. If a product do not suit you, you should be able to change so that it does. For example you should be able to change the height of the chair so it fits your size or change the contrast on the computer screen. If this is not possible the product is low on manageability. Many products that are mentioned as stressing in the questionnaire are low on both comprehensibility and manageability. When the computer hangs up, when the printer refuses to print or the emails can not be picked up, they drive us crazy because we do not understand why they do us this and *how* to handle it. It is now that we feel powerless and without control as many people mentioned in the questionnaire.

Some products are easy to grasp on a technical level but less easy on a mental and may provide no support for customisation, examples of that are timetables, calendars, door handles, stove-controls etc. Telephones are easy to grasp, they ring because somebody wants to get hold of you, but they are just as frustrating when we don't have the time to answer.

Comprehensibility and Manageability are closely connected and need to be in an organic relation. The understanding and handling of a product are two sides of a coin. If you find your computer Comprehensible and logical you will no doubt find out how to solve a problem if you encounter one. But if your computer is an unsolved mystery that only causes you trouble and acts totally without logic, you might just leave the problem unsolved and find another way to get what you want.

The motivation for solving a problem is related to the last concept: *Meaningfulness*. If your computer is meaningful for you, or what you do on it is important, you will have the motivation to search for a solution to the problem even if you find it hard to understand. A product is *Meaningful* when it has emotional significance to you, when you wish to interact with it. When it is part of something that you like and are motivated to do. When you invest energy and time in something it becomes meaningful to you: involvement creates meaning and this goes for products too. Something you have lived with for a long time, have repaired and taken care of becomes meaningful. Operational function does not have to be a prerequisite to meaningfulness but it often is. Something beautiful, or old and fable, can have an important social or emotional function and meaning. Working in the garden, listening to music or taking walks is nothing that presents a "result" or that you immediate benefit from, but they are the most relaxing, anti-stressing activities.

Meaningfulness is the most important component in Antonovsky's Sense of Coherence, but is something very rarely mentioned in product or IT design. Here is where we can find the motivational factor, that could help us cope with the stressors in products. That is the salutogenic approach according to Antonovsky.

Conclusion

Technical products and IT-systems have for quite some time been found unintelligible and difficult to handle, which has been noticed by HCI researchers. But issues like extended functionality, efficiency and control are still at the core of the debate, and the questions of aesthetics and meaning have not entered the discussion. Criticising the narrow mindedness of HCI, Redström concludes, "*It is intriguing that a research discipline devoted to developing human centred systems has paid so little attention to aspects of use that falls outside a concern for increased productivity.*" [7]

Redström suggests a design philosophy for meaningful everyday computational things where *Presence* precedes use and *aesthetics* is seen as the basis for design. This suggests that both presence and aesthetics are aspects of meaningfulness. Fulfilling desires for food, drink, entertainment, shopping etc does not

alone make you happy. Meaningfulness rather appears when we *engage* in something. This makes us feel connected, committed and emotionally engaged.

In many languages there is a connection between meaning and the senses. In Spanish Sentido means both sense and meaning, in English we have sense and make sense. Human beings experience and understand the world through the senses. Aesthetics in the Greek meaning of the word refers to what *meets the senses* and is today widely understood as the total experience of a product.[4]

The basis for our aesthetical experiences is our life conditions, claims Roger Scruton [9] [4]. Our life depends on the aesthetical choices that we constantly make. Every day we make fast and yet precise judgements of a range of things like food, traffic, weather conditions etc. These choices are a prerequisite for life itself, claims Scruton, our ability to appreciate art is just a sublimation of that. Scrutons starting point is Kant's idea about the inherent structures of the human psyche that arranges our sensory inputs in categories and the idea from Gestalt psychology that we arrange these inputs in coherent meaningful "Gestalts". When we listen to an orchestra playing, what we *hear* are just sounds, what we do is to rearrange these sounds to a musical theme - a whole. Likewise what we *see* and *touch* when we use a product are just forms, what we *do* is that we create meaning out of the forms. When the world around us appears as random, chaotic and *incomprehensible*, it is deprived of meaning. The process of making the world meaningful include making it comprehensible and manageable.

So aesthetics can be understood not as a way of making beautiful things, but an epistemology that helps us understand and interpret reality to make it meaningful. The key to create a world of artefacts that makes sense, both in the cognitive and emotional sense of the word, lies in aesthetics, the total experience of the product.

The relaxing activities and products that the people report about are all activities that are done for the pleasure of it. No goals or rationality are behind a walk in the woods. Making cooking an efficient routine is but a way of taking away the pleasure. Repetitive activities like baking, ironing or mending tools are also rewarding and relaxing, but only if they are done in their own speed and with a visible result. The old, familiar and well known is also relaxing whereas recent products like computers, cell-phones, servers and printers are likely to stress us. How much has this to do with the fact that these products are new and difficult to grasp? There is nothing familiar and reassuring with a server. It might hang up any time and most people have no idea how to configure it. One woman writes: "The increasing amount of emails feels overwhelming and almost impossible to get rid of. I'm worried about missing important meetings and people get annoyed because they expect quick answers"

The constant ringing of cell-phones in meetings and conversations is another annoying phenomena " When I talk to somebody and their phone starts to ring, it feels like they don't really want to have this conversation. It is very frustrating" writes another woman.

Can we designers help in the process of making the new and distressing a well-known and familiar companion? Are there ways of making products that "affords" a long and loving relation? Can we somehow slow down on the speed, allowing for pauses at work? Can we make things that are easy to grasp, easy to handle, possible to repair, beautiful and loyal as an old friend? The relaxing activities in the study are often slow, sensual and done alone; you're working with your hands in the garden, cook a meal or take a bath. Can some of these qualities be incorporated in products and IT systems to enhance our wish to interact with them?

There is a great need of increased comprehensibility and manageability when it

comes to products but the greatest challenge of them all is to make the new technological artefacts a meaningful part in our life.

References

[1] Aaron Antonovsky, Unraveling the mystery of health, how people manage stress and stay well, Jossey-Bass, London 1987

[2] Christina Doctare, Hjärnstress- kan det drabba mig, Runa Förlag 2000

[3] Lazarus RS, Folkman S. Stress, Appraisal and Coping. New York: Springer 1984

[4] Jerker Lundequist, Konst och teknik, Dialoger, 1999, 50-51, Trelleborg 1999

[5] Murray and Lopez, Global Mortality. Disablity and the Contribution of Risk Factors, Lancet 1997

[6] Norman, The Design of Everyday things, Basic Books, New York 1988

[7] Johan Redström, Designing Everyday Computational things. Doctoral Dissertation, departement of Informatics, Gothenburg University.

[8] Rhodin-Nyström, Sandström, Lundberg, Impaired Cognitive performanc e in patients with Chronic-Burnout Syndrome, International Neur opsychological Society, Stockholm 2002

[9] Roger Scruton, The Aesthetics of architecture, Princeton University Press, New York,1979

[10] Behandling av personer med depressionssjukdomar. SBU nr 3 1999, Stockholm

[11] IT-kartan 2000. En rapport om LO-medlemmars IT-användning. LO 2000

Breaking free from the unsustainable now

i.grout@gsa.ac.uk
For the past seven years Ian has been a Lecturer in Product Design at The Glasgow School of Art. He travels and teaches extensively throughout the departments exchange network in Europe and is also the External Examiner for Goldsmiths in London and Les Ateliers in Paris. He is currently developing an International Network in Ethical Design and is involved in designing Sustainable Communities, both activities being centred in Göteborg, Sweden. Prior to being an Educationalist he was in Consultancy developing Total Product Design Solutions for companies in the UK, America, France and Australia, including BT, Plessey, Corning Medical and Heatrae Sadia.

ingrid.kajzer@strath.ac.uk
Ingrid Kajzer is a Doctoral Researcher in the Marketing Department at University of Strathclyde in Glasgow. She has been researching sustainable marketing and design issues for over 4 years and she is currently developing the idea of the 'Living Product'. Recently she has been a visiting lecturer at The Glasgow School of Art as well as organising and facilitating Sustainable Innovation workshops with the Centre for Sustainable Design in Surrey, UK. Previous research projects include investigating how three multinational companies (Volvo Cars, Electrolux and Novartis) integrate the environment into their marketing practices. She is also managing her own consultancy, Living Company Solutions.

This paper challenges the traditional concept of 'the product' in our contemporary addictive consumer society and embarks on an interdisciplinary journey to design a way to break free from what we argue is the unsustainable now.
This may be achieved by taking the product's perspective and placing it in a wider sustainable context where deeper aspects of value, meaning and use can be explored. By utilising ecological system dynamics including; adaptability, interconnectedness, rhythm and flexibility we would seek to move beyond mechanistic design approaches and embrace a deeper and more ecological view of sustainable design. We provide initial research findings from an experimental sustainable product design project in which these concepts are embedded and explored and we conclude by speculating on forward strategies aimed at furthering change and action for designers and educators moving towards a truly sustainable society.

Key Words:
Sustainable design and education, living products, theory and action interplay, enabling philosophies, paradigm shifts

*N*o Problem can be solved from the same consciousness that created it. We have to learn to see the world anew. - Einstein

Arguably, sustainability lies in a crisis of perception particularly in the way we see the world and relate to the things around us. A number of authors including, Capra (1983, 2002) Kajzer and Saren (2000) Sterling (2001) and Walker (1998a and 1998b) promote a new way of thinking which we see as imperative if we are going to break free from our contemporary view of unsustainable designing.

Sterling (2001) suggests that 'the fundamental tension in our current age is between a mechanistic and an organic way of viewing the world'. The more organic view of the world reveals a language very different from the image of the machine, which we have grown to be accustomed to since the Industrial Revolution. We can already see this in

many aspects of our western society, with the increasing popularity of new sciences including complexity and chaos theory and with the frequent use of terms including; integrative, holistic, systemic, connective, flexible and co-evolving. We agree with Capra (2002) when he suggests that *'The design principles of our future social institutions must be consistent with the principles of organization that nature has evolved to sustain the web of life'*.

The product design community is only beginning to understand the implications of integrating sustainability into its design practices. Its current efforts speak the language of eco-efficiency and material reduction (Charter and Tischner, 2001; Datschewski 2001; Faud-Luke, 2002; Fussler and James 1996). However, designers still deny the wider global ecological crisis and consider that issues of sustainability impinge on personal creative freedom. Despite eco-efficiency the current design paradigm remains deeply rooted in the mechanistic world focusing on material possession, individuality, consumption and newness; or the assumption of unlimited growth and the accumulation of waste (Shrivastava, 1995; Van Dam and Apeldorn, 1996; Kilbourne, 1998). We argue that this is an unsustainable situation and that action must be taken and taken soon. The need to transform our existing perceptions, our thinking and our values of what makes up a healthy relationship between nature, mankind and the things that we use in this life is paramount. In the early 21st Century it is surprising to us that we still don't have truly sustainable products, services and systems in our hands.

This paper is built around initial reflections made from an exploratory journey, in which we encouraged design students to think, act and design differently in a more holistic context of sustainability and also how we, as designers and educators, may act upon this experience. In this we wished to explore what would happen if we asked young designers to:

- Embrace a more holistic and ecological view of the world.
- Move beyond recycling and reuse towards redesigning, reshaping and revaluing our
relationship to products.
- Mirror essential properties of life including adaptability, flexibility and creativity.
- Explore the potential of products as service providers within in a system of activity.

We wish to note at this early stage that we, with this paper, by no means intend to provide specific answers or tools but instead seek to document an exploration into an emerging enabling philosophy for design; reflective and open-ended in which designers could take meaningful action when seeking to grasp the complex concept of sustainability.

Towards an enabling philosophy

To be successful in sustainable product design will require a paradigm shift in outlook. We argue that there exists a compelling need to rethink 'the product' in order to reach greater understanding of the design opportunities in a sustainable and holistically interdependent market place which is, in essence, led by human need. Our identity and experiences through life are strongly linked to products and they define much of our personal identity and value (Appadurai, 1986) as well as our perception of self relative to society and our environment. This becomes of particular importance as future organisations will not only have to consider the flow and natural capital of resources, cradle to cradle product responsibilities and waste management but also the flexibility and volatility of a products various relationships with us over extended periods of time (Kajzer and Saren, 2001). We believe that the existence of the things we surround ourselves with must be contested and that as designers we must consider how to develop long-term relationships between user and object and how these may

objects grow and change with time.

Designers also need a clear understanding that all actions have broad ecological consequences. Future outcomes should be developed in a holistic way with a full knowledge of these consequences. Designers need to develop the creative skills to work across disciplines and this shift of how and where we design should produce products, services and systems of real value, which, in turn, can affect real and positive change to our environment. The development of an innovative design paradigm which allows an exploration of products as *service providers within any given activity* could be an evolving enabling philosophy for designers in making accurate, knowledge driven value judgements relative to the demands of designing objects, systems or services sustainably.

If the image of the machine inspired us in the industrial age, the image of living systems may inspire a truly creative post-industrial age (Senge and Carstedt, 2001). What would happen if the product was to be regarded as a living entity as part of a living system? What happens if designers look at products as living? These questions were asked in a multidisciplinary doctoral research project where the idea and theoretical implications of *'living products'* are under development (Kajzer 2003). It is suggested that the application of the living product philosophy focusing on non-linear interconnectedness, co-evolution, cyclical patterns and flexibility might lead to a different approach to design, allowing us to place it in a context where it may no longer be viewed as a transaction between buyer and seller, but becomes part of a much greater and more complex system.

Arguably these views could be of value to designers and design educators wishing to:
- Move from theory into action
- Move beyond eco-efficiency and resource minimisation
- Move towards a more progressive out-

look of designing more holistically and sustainably.

To this end we developed and ran an experimental design project for a specific group of product design students with a view to finding out:
- If it would add to an expanded idea of sustainable design?
- If the project in itself would produce broader sustainable opportunities and understanding?
- If the students could and would think and act differently?
- If this way of working could be beneficial and transferable into further studies?

The experimental project

The 17 students who participated in the project were both gender balanced and International. 7 were Glasgow School of Art students at the beginning of their 3rd Year of a 4 year BDes (hons) course in Product Design and the remaining 10 were visiting students from partner institutions in Germany, North America, Sweden and Italy. The project was primarily studio based and ran for 6 weeks, 3 days per week and followed the normal design school educational structure of studio-based activity, regular reviews and individual tuition.

It is important to note that apart from some visiting students having had basic seminars in sustainable design none of the project participants had a deep immersion prior to this project. In effect we were working from ground zero.

What we asked the students to do was to see how far they could push the idea of a *'product'* in a sustainability context. As designers, generally, are more comfortable working from known *'things'* in any new speculation we encouraged them to take as their starting point - an existing product - something domestic and everyday and use this to kick start a broad and explorative investigation. We asked them to:
- Challenge themselves and to think wide, think deep and think free

- Use the enabling philosophy of *'the living product'* coupled to the idea of *'products as service providers in a system of activity'* to formulate a strategy to break free
- Interrogate, orientate and rationalise their findings and to move a clear concept forwards to a manifest conclusion which, in an open forum of experts, would provoke discussion.

We wished from the outset to create an educational ethos for the project, which was centred in the explorative journey. We wanted to move from a subjective deliverable view of valuing the outcomes where there is a tendency to label and rank 'good' against 'bad' to a more objective and inclusive view considering qualities, which focused in and were resonant with human centred experience and need; lively, playful, creative, extended, connected, integrative, transformative, democratic, participatory and inclusive.

Workshop/Creative Techniques: Nature and Purpose

The project and its workshops were designed to encourage students to move from what is familiar and may restrict exploration towards what could be and what happens if. Specifically we sought to utilise design methodologies that challenged the students in the way they looked at things, objects, the environment and themselves.

The various stages and creative activities taking place in this project are illustrated below:

Time	Stages	Activities	Purpose
Week 1	Workshop I: Current state of sustainable design	Brainstorming Object stimulation Discussions	To inform and increase awareness of sustainability To capture students pre-understanding of sustainability
Week 1	Workshop II: Living Product and breaking free	Metaphors Provocations Picture stimulation Design on the spot	To stretch and break free from existing thought patterns and paradigms To widen sustainability understanding
Week 2, 3, 4, 5, 6	Design activity, review sessions and individual mentoring	Design development Group reviews	To enhance collective understanding through action and reflection To encourage the sharing of thoughts and ideas
Week 6	Open Forum with invited 'experts' in the field	Presentation and open discussions	To stimulate wider discussion and critical reflection rather than assessment To encourage a sense of par ticipation and collaboration
Week 6	Final Review Session	Group discussions	To allow students to reflect on the value of process appli cations for future studies To encourage inclusiveness and responsibility of owner ship

Notes: To enhance the individual educational experience reflexive learning diaries were utilised. The reflexive diary was seen as an opportunity to 'see' differently and to develop skills and knowledge for designers in a reflective manner. The studio was arranged to open up space for ideas and thinking. Open and community areas as opposed to individual workstations were encouraged so as to remove physical barriers between the students. The evolution of the project was captured through video and digital cameras.

What happened and why

As we launched the project our assumption was that the living product idea would clearly give a new dimension to explorative designing. We also expected that these young designers would naturally grasp the idea of products as service providers in a system of activity in re-designing and re-shaping an existing every day object.

Starting from ground zero with young designers who's minds had potentially fewer ingrained assumptions about the world and who would be relying on their intuitive intellectual and visual abilities, we anticipated no major difficulties in them taking action. It was thought that the students would be positive about the project and use their creative skills to explore breaking free in an uninhibited manner.

Initial Difficulties

The first barrier came as a surprise. When we launched the project the immediate response was; *'I don't understand what we have to do next'*, *'What are we doing?'* *'What is the outcome?'* *'What are the deliverables?'* The students expressed considerable insecurity, a strong need to be given direction and their goals clearly defined for them. As the project started to progress most students tried to remain firmly object fixated, some continued to express a need for permission to explore;

'Is it ok if I do that?' *'Should we go in this direction, or that direction?'* *'I am doing this right aren't I'* and some were still looking for acceptable answers and pre-determined goals; *'This is scary I can't see the end'*. *'How are we going to assessed?'*

Whilst this paper does not permit the scope to go into this in any considerable depth we would consider that one possible reason for this behaviour may in part be due to the prevailing educational culture in Britain which favours the quantifiable deliverable outcome above the qualitative process paradigm incorporating elements of playfulness, freedom and fun. This issue may well relate to what Sterling (2001) calls a 'crisis of education, its limited present ability to contribute to a better world'.

Initial Perception and Understanding of the 'living product'

Capra (2002) suggests that by understanding the processes that are embedded in living systems *'we can begin to design processes of change and human organisations that mirror life's adaptability, diversity and creativity'*. This may in turn help us to deal with complexity in sustainable design environments and to challenge the division we see between material and social structures. Integrating some of the fundamental ideas of living systems into the way we view and relate to products could be seen as a foundation for change and may possibly improve our capacity to implement sustainability (Kajzer and Saren, 2000).

This is an attractive notion. But questioning the essence of products and our relationship with them is a daunting task. The students' initial responses were more of confusion and uncertainty and this can't solely be explained by the existing educational paradigm. The *'living product'* concept is a controversial idea that promotes a radical shift in thinking of how we view ourselves, the things we

use and the environment that surrounds us. As a consequence we found that the literal meaning became a barrier or caused controversy. In some students minds it was seen; 'as kind of silly' and 'still sounds absurd'. "How can products be living"? Not understanding the proposition became an initial barrier especially as the students were not given a clear goal to work towards but encouraged to make their own exploration and experience.

By the end of the project we found that all the students appeared to have become aware of, understood or owned the concept of the 'living product' and its relationship to extending ability to design more sustainably. The following students quote illustrates this; 'At the beginning I had no idea what a living product was and now I think I have some understanding. Unfortunately, I feel I lost some 'living-ness' in my product and could have pushed it further. I think in the future all my designs should have a living element because everything I design fits into a greater system of some sort and life gives it greater existence within that system. Living can be so much more abstract than I originally thought'. This demonstrates how difficult we believe it is to actually grasp and take action with abstract and descriptive words and ideas taken from an intellectual ecological way of thinking.

Action manifestations

Following the initial workshops and before embarking on the deeper explorative design aspects of the project we asked the students to define their 'perfect living product'. This exercise, taking less than half an hour, was intended to give a quick rough cut of their new found perspective, to act as a further discussion point and as a trigger to further design development. These were the outcomes:

A perfect living product:
- 'Communicates with you, evoking an emotive response, leaving you with a

personal attachment (to itself) which will remain with you for its lifetime'
- 'Responds to the diversity of the users holistic need by progressing in a flexible and energetic way'
- 'Would re-instil the idea that man cannot be separated from his environment, a concept that has been lost somewhere in our history'
- 'Can be reborn with a new purpose and appearance, while reflecting new desires, it is trusted and essential, also surprising and regenerates new life'
- 'Is a raw intimate product that moves with your needs, will withstand change and still retain its appeal and satisfy for longer'
- 'Is something which you have such an attachment to or need for that you never need or want to dispose of it. It is something that when your need for it has run out it could be transferred and become a product that will live for someone else'

When looking at the analysis of the project's design outcomes and reflections we were interested in seeing if we could find evidence of students:
- Staying within their previous existing framework of action
- Working beyond the linear design and marketing paradigm
- Moving beyond designing the physical object in isolation
- Showing signs of system/service designing and its wider social connectivity

Mapping the students Journey's

When we came to reviewing the resultant body of work we found that it naturally fell into the three main groups shown below.

Group 1: Lateral and progressive approach

Only 2 projects exhibited an extensive lateral and progressive approach to designing. Closer examination of these students design approach revealed that they were:

- Always defining and breaking through
barriers
- Aware of broad social influences and
human need
- Self-motivated and self challenging;
wanting to do something really worth-
while and meaningful
- Continuously moving between thinking
and action through open and explorative
dialogue
- Willing to take risks and learn from the
experience
- Not daunted by unknown destinations
- Constructing their own meaning rather
than being given it
- Self critical as to their own role as a
designer
- Taking personal ownership and
responsibility

The developed design manifestations are
clearly founded in wider sustainability
and seeking to address real human need.
They are very 'proactive' in their nature,
for instance the designed objects seek to
provoke thought and encourage peoples'
behaviour and attitudes to be more sustai-
nable. Through designing, the students
managed to not only make us more aware
of our relationship to products but also
stretch our relationships, opening them
up, encouraging us to share, let go and
explore something new. Rather then
being punitive and demotivating for the
user these designs recognised our emotio-
nal attachment to things, to capitalise on
it and to encourage people to change. The
students explain:

'...I hope that living products are not
about being punitive but about unders
tanding real emotional issues in people's
lives, nurturing this and treating it with
care in a sustainable way. I think if it is
living it will be appealing to some core
essence (hard to describe any other way)
within people; will consider the important
issues and so will then be sustainable'

These students have taken a systemic
approach to designing, recognising that
the object is connected to a greater whole

which needs to be accounted for. The
final objects have an extended, long
lasting cycle and when they eventually
'die' they are given a new 'life opportuni-
ty'. For them sustainable design creates
products, services and systems that are
'growing and living' with us.

'I like the idea that a living product does
not last forever. I am not sure if people
want things forever. I like the idea.that
when its "life" has ended though that it
goes back into something else, in some
way helps to regenerate earth'.

Group 2: Linear and defensive ap-
proach /Periodically breaking free

The majority of the students belonged to
this category. They were exhibiting a
narrow to medium linear and occasionally
a lateral approach to designing. In short,
they found it harder to let go of existing
design paradigms and this might have
inhibited them from stretching their
designing beyond current norms. A closer
examination of the students work provide
us with the following insights:
- Requiring significant support when
taking risks
- Comfortable with open-ended develop-
ment only when supported and encour
aged
- Limited personal growth through
experience
- Maintaining a focus within defined
boundaries
- Highly likely to create safe uninspired
proposals
- Seeking permission before taking risk
- Occasionally stretching own experience
- Strong defence of linear trajectory

Some students in this group however
started to break free, showing signs of:
- Greater tendency to move between
thinking and action
- On / off confidence, breaking free then
running back for cover
- Occasional inability to see success and
opportunity when working (can't see the
wood for the trees)

- Flashes of creative insight
- Ability to work independently except when blocked
- Proactive engagement when seeking support and advice

Similarly to group 1 the designed objects are focusing on enabling the user to have a closer and longer relationship with the product. This is expressed by this student quote:

'Would you throw away a pet? No, of course not. So if this object becomes valuable and potentially like a pet, if you never throw it away, if you look after it and it is constructed well, it will go on and on and on!'

This group had a tendency to rely on technology to a large extent to enable the product concept to come 'alive'. These resulting objects were promoted as 'intelligent' and which, with time, would learn our habits and desires.

These students also attempted to take a more systemic approach, recognising that their objects were part of a greater system. Whilst considering the connectedness between objects they tended to forget to account for people's behaviour. Their solutions did not question existing life styles showing a preference to fit in with existing systems.

The key difference with group 1 was that when designing their products these students did not make sustainability the starting point preferring to attach it afterwards. They had a tendency to see sustainability and living as separate. One student in this group reaches some insight at the end of the project and explains:

'I found it hard to relate living products with sustainability at first but now I understand they co-exist. I could go on and on forever about my views on the connection but basically I feel that with a living product you establish more of a responsibility for it and a harmony with it, thus a more sustainable existence grows from that'

Group 3: Linear and non-directional approach

Only a few students belonged to this group which were exhibiting a broken and stuttering non-directional approach to designing:
- Had to be led / provoked into action
- Preserving / clinging to previous experience and knowledge
- Very unwilling to take risk even when supported
- Unlikely to be provocative or contentious in action or thought
- Over controlled and demonstrating inability to take action without clearly defined and easily achievable goals
- Work pattern defined by leaping from one concept to another with no synthesis of development; shorter exploratory and questioning cycles
- Insecure with open-ended development
- Rarely capable of independent thought and action
- Lack of reflection on the design process

The physical design manifestations had a tendency to be more about *'doing more of the same'* rather than *'doing it better or differently'*. Sustainability is only temporary and appears forced onto the object and is not designed in the context of any sustainable need, it's simply an added on thing. The final outcomes barely move beyond the recycling of materials. They do not fully look at the relationship that we are going to have with the product or what feelings that this should evoke. The students do not mention how their products will *'grow in time'*. In addition, the products relationship with nature is very literal, more of an aesthetic feature that makes it *'look nice'* rather than taking the opportunity to explore the product's deeper relationship with nature. One student explains:

'I had a hard time combining the two ideas (living products and sustainability) while working on the project. Maybe my idea of 'living' holds some boundaries or maybe I need to warm up to the idea of

sustainability some more. It probably provides us with an insight, but at this moment I am not sure how'

Forward strategies

Systemic Change in Education

'What we need is a radical change in perspective within educational institutions to deal with the magnitude of the problem that we are currently facing at a planetary level'
O, Sullivan (cited in Sterling 2001 p.34)

The experience from this project brought to our attention the need for systemic change in education. Overall the student experience stretches understanding and ability and does in 2 cases clearly break free. Interestingly, and also quite by chance, the groupings above mirror the British undergraduate academic assessment system: 1st, 2:1/2:2 and 3rd Class Honours and the natural positioning of the work reflects the normal bell curve of degree achievement. This may support the supposition that this project is working within a mechanistic design education paradigm, where students position themselves to known norms and that what is happening here is that the students are really just breaking free within a straight jacket. In this are we still, to paraphrase Einstein, *'trying to solve the problem from the same consciousness that created it?'* or are we just at the beginning of learning to, 'see the world anew?' Can we expect students to really break free unless there is wider support from all forms of their education and also our society and its views of a holistic sustainable ecology? We can create projects, such as these, which in our opinion do have value, that's evident in the work and responses of the students, but unless they are situated within a wider supporting network then the risk is that their effect and value will be diminish over time when competing for attention

with the other pressures of education and living. In a sense it's like leading horses to water and then just when they are starting to drink taking the water away.

A Manifesto

When setting out on this project we had anticipated that we would be reporting on a straight forward development, resulting in a clear philosophical direction which would smoothly move us towards a better way of designing sustainably. What we found, however, was that the journey was much more complex than this and that the barriers and inhibitions experienced by our students in taking action are, we believe, reflected in our society in general when approaching issues of sustainability. In this respect alone this has been a valuable educational journey for us, and one that has opened up a wider avenue for further exploration. In this we would wish to encourage designers, when taking theory into action, to:
- Develop a more holistic perspective embracing a wider design context when considering the relationship between product and environment.
- Revisit the boundary between real and perceived need in our overtly consumerist society
- Resist producing ever more products which fuel addictive desire for the sole purpose of profit and greed.

In this activity we have made some small steps, we have enabled students to experience a new way of thinking and doing and the results are clear - our students are asking *'why isn't this in everything we do?'* We in turn ask the same question but of a wider nature. In our work here we subscribe to the need to start anywhere, now and with what you already have. This is of value as, also, is the learning experience and confidence that comes from just doing that small thing. However, if we are to move to a more sustainable future, as it is clear to us that we must, we need to become more

radical, courageous, outspoken and
demanding not only of ourselves but also
of those that we share our educational,
cultural, business, economic, political and
physical environment with; we must
transform it. Above all we must take more
action and action is a difficult thing. We
cannot in the long term reside in the intel-
lectual, if we do we will run the risk of
falling short of a truly global sustainable
society. If we stay within a mechanistic
view of sustainability we may possibly
convince ourselves that we can solve these
issues solely by recycling, reuse and
disassembly. One of our students puts it
this way, *'I do not want to design just
more gimmicky products for the eco-
design handbook, I want it to mean more
than this'*. For it to mean more we must
pursue change vigorously and that is also
difficult. But as Kosko reflects, *'You
cannot learn without changing, or change
without learning'*. So, with regard to
sustainable design, we believe that we are
only beginning to comprehend the full
extent of what the opportunities are and
what we could, creatively, do with them.

*'We have to be the change we want to
see'* - Gandhi

Design av företags- och produktnamn
Författare: Jens Bernsen
Utgiven 1994, Svensk Industridesign/Industrilitteratur, Stockholm
Ett bra namn är inköpsporten till identifikation, igenkännande och förståelse. Ett dåligt namn kan medverka till att man blir förbisedd eller feltolkad. Ett bra namn ger ett företag eller en produkt en god start, kanske även ett gott liv. Ett dåligt namn är en belastning. Utvecklingen av ett namn på ett företag eller en produkt är en designuppgift i sig. Boken kartlägger beslutspunkter som ligger bakom valet av namn och anger kvalitetskriterier för denna designuppgift. Boken är både på svenska och engelska.
Pris: 150 kr exkl. moms + frakt

Design for Product Understanding
Författare: Rune Monö
Utgiven 1997 av Liber
Industridesignerns uppgift är att forma tingen så att vi förstår hur de ska användas. Boken lägger därför tonvikten på produkten som ett tecken, dess budskap och kommunikativa betydelse. I flera avseenden bryter boken ny mark på produktsemantikens område. Design for Product Understanding är nödvändig vid utbildning av industriella och grafiska designer och ovärderlig för alla, som på ett eller annat sätt arbetar med våra nyttotings gestaltning. Den vill också öppna dörrar ut till vidare forskning på ett fortfarande jungfruligt område.
Pris: 288 kronor exkl. moms + frakt

En resa i design
Författare: Lisa Warsén och Per Leander
Utgiven 1999 av KFB, Kommunikationsforskningsberedningen
KFB har under ett antal år finansierat ett forskningsprogram om industriell design inom kollektivtrafiken. Detta arbete är nu avslutat och finns sammanfattat i en handbok, som heter Resa i design. Boken vänder sig till alla som arbetar med att förbättra kollektivtrafiken. De som arbetat inom programmet har funnit att industridesign är ett utmärkt verktyg för utveckling och management när det gäller såväl tjänsten som alla dess olika beståndsdelar. Design är synlig och riktar sig till både resenärer och personal. Dessutom manar design till helhetssyn. Läs boken Resa i design och få inspiration och idéer.
Boken behandlar utformning av fysiska produkter, rumsmiljöer och information och hur man skapar en fungerande helhet med människan i centrum. Den beskriver både genom sin huvudtext och ett stort antal exempel hur design genomförs och hur design kan användas. Det handlar om att färdas väl. Om välfärd!
Pris: 350 kronor exkl. moms + frakt

Handla
Utgiven 1997 av Tullbergs kultur & reklambyrå

Boken handlar om förändring, välfärd, arbete, lärande, konsumtion, arkitektur, design, kultur och framtid utifrån 1930-talets bok "acceptera". Författarna tar upp olika faktorer som styr utvecklingen av arbetslivet och för fram visioner kring lärande och förståelsen av kopplingen människa - maskin.

Pris: 368 exkl. moms + frakt

Ett steg mot en hållbar framtid
Produktion: EkonoMedia Affärspress AB
Utgiven oktober 2000 Projektledare: Christer Ericson och Hans Frisk

Industridesign är ett kraftigt verktyg i kampen för att rädda miljön. Förr fokuserade man på utsläpp, förpackningar och sopsortering. Nu står det klart att miljötänkandet måste börja redan på ritbordet. När produkten lämnat fabriken är det för sent. 1998 startade projektet EkoDesign, initierat av Svensk Industridesign med finansiering från NUTEK, Näringsdepartementet, EU:s Småföretagsinitiativ och deltagande företag. Elva mindre och två större företag har med hjälp av specialutbildade industridesigner och miljöspecialister gått igenom och miljöanpassat sina produkter och olika arbets-metoder. Målet med EkoDesign-projektet har varit att minska den totala miljöbelastningen med 50 procent- under tillverkningen, när produkten används och när dess livslängd är slut. Ett mål som vi lyckats uppfylla. Läs och låt dig inspireras!

Pris: 56 kronor exkl. moms + frakt

Sverige i god form
Författare: Ann-Kristin Myrman
Utgiven 2000 av LO, Landsorganisationen

Vi vill med skriften Sverige i god form bidra till en ökad diskussion om formgivningens betydelse för sysselsättningen och utvecklingen av svenskt näringsliv. Vi tror att det finns stora utvecklingsmöjligheter för företag som satsar på en genomtänkt formgivning. Det kan leda till sysselsättning, utveckling av arbetets innehåll och bättre produkter.
Det finns många aktörer vid en produkts tillkomst: formgivaren, konstruktören, som ibland är samma person som formgivaren, företaget, de anställda, den fackliga organi-sationen, köparen och brukaren. Alla kan bidra med mer än de gör idag. Alla har kun-skaper som inte utnyttjas och inte samordnas. Vi tror att det finns både kunskaper och intresse inom våra egna led som inte tas till vara. Därför vill vi med Sverige i god form framför allt stimulera facket och fackets medlemmar att fundera på och undersök om en satsning på formgivning skulle kunna bidra till att utveckla det egna företaget.

Pris: 32 kronor exkl. moms + frakt

Tänk på saken

Författare: Folke Edwards, Gunilla Grahn-Hinnfors, Torsten Hild, Ingrid Sommar och Anders Westgårdh

Utgiven 2000 av Nordbok Publishing AB

År 2001 är ett av regeringens utlyst år för arkitektur, form och design. För att lyfta fram designlänet Västra Götaland utkom boken "Tänk på saken", ett praktverk i ord och bild om västsvensk design. Närmare 100 utvalda västsvenska föremål, som är designade och/eller producerade i Västsverige. Från bilar till porslin, från möbler till ostar, från servetter till motorsågar. En del föremål är klassiska, andra är samtida. Boken skall skänka kunskap kring design och inspirera till ökat designtänkande bland företag, myndigheter och organisationer. Boken skall vara en upplevelse för dem som tar del av bokens texter, bilder och grafiska form.

Pris: 250 kr exkl. moms + frakt

The Human Dimension

Utgiven 1994, Svensk Industridesign, Stockholm

I oktober 1994 arrangerade Svensk Industridesign, Arbetsmiljöfonden och Sveriges Tekniska Attachéer utställningen "Den Humanistiska Dimensionen" i Milano. Utställning visade 70 svenska företags produkter, utvecklade med omsorg om dem som skall använda dem. Ett antal namnkunniga personer, t ex Gustaf Rosell, Kerstin Wickman, Anty Pansera och Maria Benktzon, ger sin syn på denna humanistiska dimension, ett förhållningssätt som gör Sverige unikt inom användarinriktad produktutveckling. Boken är på engelska.

Pris 50 kr exkl. moms + frakt