

practice imperfect

by Kate Fletcher



These pages are normally dedicated to promoting ecodesign theory or to celebrating its practice. Comfortable with such a tradition, it is perhaps easy to forget that 'the environment' – both subject and object for us – remains far from the agenda of large numbers of textile and clothing designers in the UK. A recent survey investigated the attitudes and experience of a wide range of textile and clothing designers towards the environment and their opinions on how the design process can be used to effectively tackle environmental problems.

Some of its results are discussed here

ENVIRONMENTAL action is prefaced by a preoccupation with key issues and supported by the right information. The survey touched on both of these subjects: the interest that textile and clothing designers have in the environment and their knowledge of actual environmental burdens. General levels of interest in 'green' fabrics and clothes reached a peak in the late eighties, early nineties only to fall away mid decade. More recently, trend prediction magazines have forecast a revival in environmental awareness and 'eco-chic'. The results of the survey featured here provide some evidence that designers reflect this trend with approximately two thirds of respondents expressing 'some interest' in the myriad environmental issues associated with yarn, fabric and garments. The second largest group (25 per cent) admitted to 'passing interest'.

Yet while there is evidence of interest in the environment, there is less convincing proof that designers are aware of the broader implications of their activities. Over half the respondents indicated that they felt design activities caused 'no damage' to the environment. Taken at face value this is perhaps accurate, in so much as paper-based design work, sample making, the energy needed to light and heat the studio (etc.) have limited environmental impact. More subtly,

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however, an assertion of 'no damage' suggests a failure to appreciate that decisions made during the design stage affect environmental quality at other stages in the lifecycle. Such a tendency towards myopia is indicative of a fragmentary and competitive sector such as textiles and clothing, but wholly undermines the ecological approach to design.

When questioned about the environmental impact thought attributable to natural fibre cultivation, almost half of the designers in the survey stated that it was 'little' and a third that it was 'none'. In stark contrast, less than one per cent of respondents indicated that synthetic fibre production caused 'no damage' to the environment, instead 60 per cent suggesting that its impact was substantial.

The polarised picture painted by such responses of synthetics as 'bad' and naturals as 'good' is flawed. While there is no dispute that producing synthetic fibres impacts on the environment, it is not true to say that natural fibre cultivation is environmentally benign. If however, it is

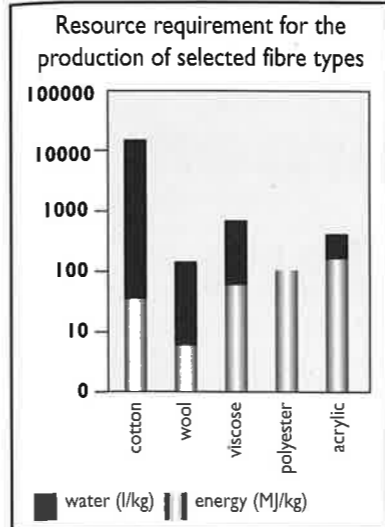
assumed that the designers' responses are not a measure of environmental impact, but instead are answers to a different (related) question – the potential renewability of the fibre's major raw material – then the portrayed opposition of naturals and synthetics is more accurate. Lack of distinction between 'environment friendliness' and 'renewability' is a recurring feature of the textiles-environment debate and one which was in evidence ten years ago, when environment friendliness was simplified to the symbolic use of the 'natural': natural fibres, natural dyes, and the 'natural look'.

It is clear from the table below and chart on the facing page however, that focusing on one element of environment friendliness (renewability) belies the complex range of environmental impacts that all textile fibres have on the environment.

Most designers in the survey shared the belief that knitting and weaving cause little environmental damage and that the impact associated with colouration and finishing is high. These results

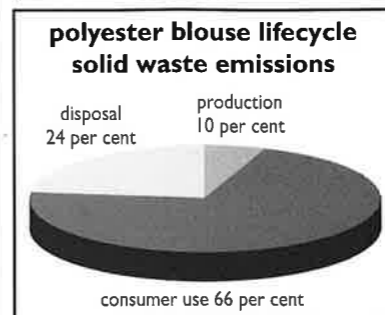
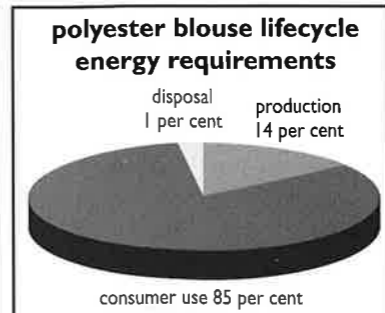
	wool	cotton	viscose	polyester	acrylic
raw material renewability	x	x	x ¹		
use of hazardous substances	x	x	x	x	x
water consumption	x	x	x	x ²	x
energy consumption	x	x	x	x	x

1 viscose is only partly renewable – while its major raw material is cellulose, the conversion process uses fossil fuels
2 polyester can be produced via several routes - some not requiring water (Laursen and Hansen, 1997)



agree with the received opinion on environmental impact of textile processing: that chemical processing imbues more impact than mechanical processing. However, such broad brush categorisation can lead to false conclusions. Weaving, for example, requires preceding and succeeding chemical processes (sizing and desizing), imparting a chemical impact to what is commonly viewed as a solely mechanical process. Size represents the largest single group of chemicals used in the textile industry and accounts for 50-60 per cent of the COD (chemical oxygen demand) loading of a textile finishing plant.

When it comes to the environmental impacts of laundering and disposal, almost all designers indicated that both activities caused impact, although the degree varied. In general, laundering was seen as less harmful than disposal, and both laundering and disposal far lower impact than colouration, finishing and production of synthetic fibres. It would seem the findings of reports which emphasise the high relative impact of laundering (such as that authored by Franklin Associates on the lifecycle impacts of a polyester blouse) have not been widely appreciated. The Franklin Associates' report in summary states that most of the total energy requirements and solid waste emissions throughout a garment's life are attributable to consumer use, i.e. laundering (see diagrams). While the report assumes 1000 washings and wearings (a high estimate) so accentuating the impacts associated with consumer use, the more general conclusions – that consumer use greatly influences the overall environmental profile of a garment – cannot be overlooked.



The survey also investigated designers' views on the environmental implications of various textile fibre types. The respondents were given the task of choosing five fibres which cause the least environmental damage in production from a larger group of natural, synthetic, regenerated and blended fibres. The set of preferred choices which emerged were fairly uniform and predictable (in the light of the information presented above): wool; hemp; cotton; linen; and, silk. However, when asked to prioritise them, cotton was clear favourite. The preference for natural materials in general and cotton in particular suggests that designers still have incomplete information relating to resource consumption including agro-chemical use and processing impacts. It could also be suggested that a preference – in environmental terms – for cotton is a product not solely of missing environmental data, but of a desire for a popular fibre to be top of the pile. Cotton has a dominant share of the world fibre market and if it were to head the environmentalists' list, it would have the salutary effect of giving a 'green' stamp of approval to most current material choices and preferences. Despite the fact that hemp and silk fall into the sample's favourite five, these do not really figure as 'priority' fibres. Nylon, polyester and the blended fibres polyester-cotton and wool-lycra were not prioritised once. In contrast, lyocell (a cellulosic fibre with a green profile, brand name Tencel), although it was not given as a choice, was fairly popular.

When given the same task – choosing five fibre types – but on criteria of ease of recycling (rather than minimum impact in production as above), an almost identical set of choices emerged: wool, cotton, hemp, linen, and, silk. The recyclability criterion saw both the synthetic fibres in the list, nylon and polyester, receive a higher selection rate than above, although blended fibres remained at near zero.

When asked to prioritise the fibres in terms of recyclability, wool was preferred universally. The results concur with generally accepted recycling themes: wool is highly recyclable and blends (which barely scored) are problematic. This, in a loose way, signals some sort of appreciation of the difference between recyclability as a single criterion and environment friendliness in general – however the dominance of natural fibres is again emphatic. Thus it seems that on this issue, as on others, the legacy of the 'natural is best' message continues to frustrate informed debate.

Further evidence of the fixation with natural materials is provided by responses to a question on the best two ways to reduce environmental impact of a design. The most popular type of answer centred on use and/or choice of materials; the single most popular being 'use natural materials'. Outside the sphere of material-related suggestions, other popular responses included: 'design products to last longer'; 'improve education & information'; and 'improve dyeing/printing techniques incorporating less hazardous dyestuffs'. All such responses have tremendous value in enabling us to decipher the sensitive areas, in environmental terms, for the design community. But as we break codes and interpret responses, the struggle for information on basic issues becomes apparent.

It seems likely a major gulf in knowledge and practice will develop between those in and outside the textiles-ecodesign community. Without corrective action which lays foundations of the right information across communities of designers, producers and consumers, the trend in ecodesign towards ever-more-sophisticated analysis and theory building will further isolate parties. Information is available and the results of this survey show there is a need to disseminate it in the right language, through the right channels, to the right people. And it needs to be done now. ■

■ To join the TEN discussion group, e-mail: mailbase@mailbase.ac.uk with no subject, but with the following in the main text: join TEN first name last name (your details)

References
Franklin Associates. (1993), *Resource and Environmental Profile Analysis of a Manufactured Apparel Product: Woman's knit polyester blouse, American Fiber Manufacturers Association, Washington D.C.*
Laursen, S. E. and Hansen, J. (1997), *Environmental Assessment of Textiles, Danish Environment Protection Agency, Copenhagen.*