



## Paradox of the Average: Why Users Need Designers but Designers Don't Need Users

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# Paradox of the Average

## Why Users Need Designers but Designers Don't Need Users

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Imagine a moderately successful author, a string of novels to his name, but recently, unaccountably, bereft of ideas. The agent is asking what's wrong, the publisher wants to see return on their investment. The author decides to try something new to get the writing process going. It has recently come to his attention that there are established reading groups on the internet discussing the finer points of his work (points sometimes finer than he himself understands). He decides to use them – the readers of his books – in his writing process. His new novel will be written in participation with his readers. He will ask them what they like to read in his work. He will ask them which new characters he should be thinking about developing. He will ask them what subtleties in plot he might introduce. And then he will put it all together. He imagines it will be his most popular work. After all, he reasons, his readers should know what they like.

The scenario is plausible. American author John Updike took part in a similar experiment organised by Amazon.com, although not because he was bereft of ideas.

The experiment took place over the course of forty four days in 1997. Updike wrote the first paragraph and then each following day any visitor to the Amazon's website was able to submit the next day's paragraph with a daily winner selected by committee. On the forty-fourth day Updike ended the book by writing the last paragraph. The story was called *Murder makes the Magazine* and reviews were less than favourable.

Consumer participation has also proved problematic in other spheres. It is sometimes disconcerting to read that the ending to a big-budget film has had to be re-filmed because a representative pilot audience didn't like the original ending. This often results in two separate, though related, films: the popular version, and the director's cut. The implication is that the directors cut is the 'real' version, or at least the most interesting version, while the popular version is, well, popular.

There is a feeling here that what is produced by participation is of inferior quality. We expect to be entertained, stimulated, fascinated or charmed by a novel, for example, but we don't expect to have to write it. Our idea of an author is the hackneyed idea of someone struggling for months behind a desk, wrestling with the expression of complex ideas in the completion their work. As Conrad writes in his introduction to *The Secret Agent*:

[The writing] was at first for me a mental change, disturbing a quieted-down imagination, in which strange forms, sharp in outline but imperfectly apprehended, appeared and claimed attention as crystals will do by their bizarre and unexpected shapes.

The writing process is Conrad's. *He* is the author fashioning the final work from the 'strange forms' he imperfectly apprehends. The author behind the desk.

Why should we think of designing any differently? If we substitute the idea of an author or director for that of a designer, and that of a desk or cutting room for that of a drawing board and CAD system what is different? There is still a process of production; a design manufactured into a physical product that is then consumed. Why would we think that that same designer going out and collaborating with potential users of their product, and encouraging them to participate in the design process, would result in a better product? We expect a product to function properly, we expect it to be pleasing to look at, we expect it to be easy to use. We don't expect to have to design it. But should we?

In this paper I argue that, just as in the writing of a novel, in the design process users (consumers) need designers but designers don't need users. That is not to say that it is pointless involving users in a design process, only that it is not, as adherents of participative design often maintain, a necessary condition for a successful or even a good design.

To argue this I will first attempt to characterise the participatory design process along political lines and question whether participatory design based on a democratic ideal is possible. I will move on to talk about different ways of conceptualising user/consumer 'need' and concentrate on the relationship between need and value concluding that value for the consumer can be explained by a concept like the 'potential for uniqueness' of an object. In the final section I will discuss the now familiar textual model of design – the design process as a process of writing and the consumption process as a process of reading – concluding that participatory design concentrates wholly on fulfilling average needs in the writing process while value is primarily created in the reading process. It is here that we can discern the 'paradox of the average': in following democratic ideals participatory design aims at uncovering the requirements of the 'average' user and meeting those requirements in a design object. But if value is really created only after the product is purchased, then designing for the 'average' user really makes little sense.

I will concentrate in this paper on the design of consumer objects; significantly objects that are *chosen* to be purchased. Stereotypical among these are items such as mobile phones, computers, coffee machines, MP3 players, televisions, and possibly software. The arguments we will give may well apply more widely – to buildings, commercial and bespoke software, and engineering equipment for example – but the focus of the paper will be on consumer objects and the field of product design. This in turn restricts the (implicit) definition of user-centred design that I shall use in the paper. It is not intended that the conclusions of the paper should apply to all user-centred design, simply that which involves the design of consumer objects.

### **The Politics of Participation: Autocracy and Democracy**

Let us crudely characterise the political aspects of the design process in two models. The first is something like designing as autocracy; designer as the head of the project, as chief decision-maker, as author, director, and final word. The designer as – in effect – god. What the designer says goes. Any designer known as a name, a Philippe Starck say, or a Dieter Rams, a Michael Graves or a Rem Koolhaas is likely to fit this description. The key determinant of success in a design process such as this are thought to be the judgements of the designer. These will be judgements based on experience and intuitions built up over tens of years and hundreds of projects. Judgements, we can assume, that count for something. Much work is done by others in the process, but the work of the others depends on an organisation that has at its apex the designer. With a clear structure of accountability and responsibility this is an expedient way of designing.

The second model for consideration is designing as more like democracy; users as designers in a process where the design outcome is negotiated between all involved. Everyone has a say in generating alternative proposals, elucidating their own experiences, and criticising suggested solutions. The organisation of this process is such that no one is ignored, minority groups are listened to, and a voting majority carries the day to the assent of all. The impulse for this hypothetical design process is social, borne out of a respect for other persons<sup>1</sup> or held as a *prima facie* right of all people potentially affected by a design.<sup>2</sup> This second model of design swaps expediency for morality: the eventual users of a product (or representatives thereof) *should* have a say in how it is designed. There may be other advantageous benefits to this kind of design, not least among these the idea that a better product will result, but the primary motivation is political: *giving design back to the people*, we might call it if we were looking for a slogan.

In reality there is much design carried out between these poles, perhaps even within a single project. The idea is to capture a rough but workable distinction that, broadly speaking, holds. Similarly, there are many types of participatory design. Some approaches ask participants to generate ideas and solutions,<sup>3</sup> some use participants as a source of ideas,<sup>4</sup> some study participants *in situ*<sup>5</sup> while others ask participants to criticise working prototypes or final designs.<sup>6</sup> Generally, however, these approaches share the assumption that a design process involving users will be a more successful process than a process not involving users. Asaro, for example, links the *success* of a technology with the involvement of users:

A given technology will only be empirically and politically successful if it is able to survive a dialectic of design and use. While it is possible to get a technology 'right' first time around, the best guarantee of a technology's success is to subject it to successive redesigns informed by user reactions. [...] Participatory design methods can be a highly successful way to build technological systems because they integrate an assessment of material, practical, and political consequences of a system in a single dialectic of resistance and accommodation.<sup>7</sup>

An early definition of user-centred design puts more onus on the *responsibility* of the designer to include users:

Designers must work hard to learn as much as possible about the users of the system and the work they will do with it. They must assume that their initial design ideas, even given this background information, will be wrong, and plan for repeated design. They must base these redesigns on empirical

measurements of the success of the design, made on actual use of an implementation, a prototype, or mockup.<sup>8</sup>

The designer must be humble, they are suggesting, and assume that they ‘will be wrong’ – probably a bitter pill for many designers, although not a recent view. In *The Republic* Plato argues that it is the users – the flute players – who have true knowledge of the flute and hence their own needs. Although the designer (the flute maker) “has a correct *belief* about [the flute’s] merits and defects... he is obliged to get this by associating with and listening to someone who *knows*.”<sup>9</sup>

In questions of design the distinction between knowledge and belief remains with us to the present, along with the question: are the beliefs that designers have about designing – based on their experiences and intuitions – enough to count as knowledge, or do the users of products have the true knowledge about the products they use? Here, then, lie the two ends of a scale. At one end complete autocracy where the designer decides; at the other end complete democracy where the representative group decides. The inclusive (virtuous?) process of participatory design versus the exclusive (self-indulgent?) process of ‘traditional’ design.

The unalloyed virtues of democracy have, however, received considerable criticism. As an example Graham, considering the philosophical implications of the internet, outlines a number of basic problems with democracy.<sup>10</sup> First, is the problem of inclusion: if all people affected by a law have a right to determine the law, then what of people affected by our laws but outside of our traditional borders? Then there are problems associated with the representation of minority groups: small children or the mentally impaired, for example. Considering the outcome of a democratic vote it is easy to imagine a majority voting for a law infringing the basic rights of minorities. Graham even argues that the principle of ‘one man, one vote’ is problematic. Why should people who have taken the care to educate themselves about salient issues only count equally with people who have not bothered to make the effort? The case for a design method being right or good simply because it is democratic is not clear cut then.

In considering participatory design we might also find that we have made a category mistake. In practice participatory design is rarely a spontaneously occurring activity, but an organised, purposeful process. This, of course, implies an organiser of some sort. Another variation is for designers to design systems that allow users to design for themselves<sup>11</sup> but this points up a problem. Whichever system we employ for our democratic ideal is presupposed by a previous design process of the democratic system itself. We are caught in a regress where the likely outcome is that someone (behind a desk perhaps) thought up the system in the first place.

## Fulfilling Needs and Creating Value

The basic distinction between autocratic design and participatory design, particularly (though not exclusively) at the participatory end of the scale, assumes a relatively straightforward theory of need in relation to products.<sup>12</sup> Designing is primarily an action that has need as its impulse, but construing what that need is, and how meeting that need might be valuable to a prospective consumer, is far from straightforward. Participatory design relies on the premise that the needs of users will be uncovered, expressed, or constructed during the design process, and that by meeting those needs a successful product will result. Successful in this instance probably means something like 'fitness for purpose' or 'ease of use'; a primarily functionalist view of success. This is certainly true in the area of product design, where need has been construed – usually explicitly in a 'programme of requirements' – in terms of functionality and usability, with a nod to aesthetics and, increasingly, sustainability.<sup>13</sup> This tendency to functionalise need has also been commented on in the consumer research literature:

There is a spreading consensus that much, if not all, consumption has been wrongly characterised as involving distanced processes of need fulfilment, utility maximisation, and reasoned choice.<sup>14</sup>

Whether it is a single designer or a group of representative users taking part in a design process the tendency is, then, to construe the product requirements in terms of a number of related needs that derive either from participatory work with potential users, or from the intuitions and experience of a designer. The underlying assumption is that *meeting* those needs results in a valuable product.

There is a distinction to be made here and that is between the 'needs' resulting from a participatory design process, and the 'needs' resulting from the intuitions of a designer. The former, in sticking to the ideals of democracy and equality, entails a necessarily average conception of need for the user group. Indeed a true participative design process has no other recourse than to an 'average' user. This is where it differs from a traditional 'individual' design process. An individual designer might assume they have a basic understanding of the average user, but this is different from directly employing a method that results in an average.

An average need in the product design process also assumes that a resulting product will somehow embody this need and that this embodied need will necessarily lead to value for the consumer. However the assumption that meeting an average need does actually provide increased value to the consumer is open to question.

First, there is the difficulty of relative judgement. Scruton argues that meeting the needs of consumers is not only concerned with

addressing the separate needs of, say, usability and sustainability in a product, but also finding the relative value between the two constraints, assuming they are quantifiable to some degree.<sup>15</sup> This would be equivalent to finding the point at which the user would tolerate a less usable product for a more sustainable product. Finding this relative value, which every product must do in a concrete way, is easier to do with an *actual* product – i.e. to say whether a particular trade-off is acceptable *post hoc*, and almost impossible to do in theory. Even if it were possible to make reliable judgments of this kind in theory, it is questionable whether they would be stable judgements and not vary according to changing contexts.

Simply meeting the relative needs discovered in a participative design process, then, is no guarantee that the product on which the assessment of relative need is based will be acceptable to the users originally trading-off those needs. To some extent a design process involving the production of a sequence of prototypes gets around this problem. There are, however, nearly always qualitative differences between prototypes and final products.

The previous argument pre-supposes that we actually have a good idea of what ‘needs’ are, and these are usually, though not exclusively, conceptualised in terms of function. Need has, however, proved a remarkably elusive concept to pin down and, at least in the design theory literature since the Bauhaus, tends to be mired between the normative and the descriptive. A participative design process assumes that the needs of users will be discovered or constructed to some degree. That is to say that needs *can* be described. This, however, leaves open the question of what people might need in a wider, normative, sense (needs that they might themselves be unconscious of), for example the need for a progressing society, for beauty, for a clean environment, etc.

It is tempting to bypass simple descriptions of need, and the corresponding tendency to commit the naturalistic fallacy, and replace it instead with a more powerful normative theory of need. This has happened particularly in the area of sustainability. The problem here is that there is still often a missing moral premise in many normative ‘need’ arguments. It is relatively straightforward to come up with the normative assertion that we (i.e. right-thinking people) need x, y, or z. but much more difficult to find the ethical justification supporting the normative statement.

Borgmann, for example, argues that we need, as a society, to produce products that help us to preserve what he terms our *focal practices* – he names the ‘culture of the table’ as an example here – but he doesn’t use any normative ethical theory to justify this.<sup>16</sup> We simply have to assume that focal practices are a morally a good thing. Similarly Scruton argues, in a rather more sophisticated manner, that what is needed is a sense of the appropriate in designing, a focus on creating objects of lasting aesthetic value.<sup>17</sup>



Again the moral basis for this is unclear. Scruton attempts to locate the moral in the aesthetic but, as with Borgmann, we are left feeling, in the examples that he selects, that this is little more than his preference. Indeed the whole realist concept of need has been questioned by Fry. He writes: “Every calling up of need co-exists with an unstated theory which constitutes it”.<sup>18</sup> This is certainly true for normative statements of need, but less obvious in cases where need is used in a more descriptive sense.

How, then, is it possible to make the link between need and value, for such a link would seem to exist on the evidence of so much consuming behaviour? People are clearly successful in finding things of value, and the serial nature in which they do so suggests this to be a fundamental need in itself, independent of the needs that a particular product might putatively fulfil. If it is not possible to either construct this need within a participatory design process or come up with a normative standard engendering wider social values – too functional on the one hand, too ideological on the other – then how might we connect the two concepts?

A concept like *uniqueness* proves sufficient to link need and value together; a non-functionalist description of need not impinging on moral concerns.<sup>19</sup> At first glance such an idea looks either ironic (one could argue that the technological progress of the past couple of centuries has been entirely focused on (re)producing a consistency in products to an increasingly higher level of quality) or trivially true (any product will provoke unique feelings or eventually reside in a unique context) but the idea deserves further thought. Let us consider the idea that value is created by uniqueness in a product, and products are acquired for their potential for uniqueness.

There are a number of ways in which products might create uniqueness for consumers but the basic process by which this value is created is the same.<sup>20</sup> A product is purchased on its ‘potential for uniqueness’, and during the course of its use existence either fulfils or denies this potential. The use of the product, or the product itself, must demonstrate uniqueness. This could be demonstrated by ‘playing’ the product: displaying unique talent in using the product – for example playing a musical instrument, quickly programming the video recorder, or simply making a good tasting cappuccino – or by remembering the meanings that accrue by a product’s continued presence in a space. Uniqueness, then, is not a moral concept. It is simply a description of an abstract need, and a need that, if met in the interaction of user with product, creates value.<sup>21</sup>

### **Reading Creates Value**

The possibility of creating value as we have described it comes only after the product has been chosen and acquired. This makes consumer products slightly different from other types of design product in that they are (1) specifically chosen and (2) can be

disposed of if uniqueness is not achieved. There is a difference here between choosing to use a public building, for example, and choosing which new mobile phone to buy. There is a sense in which one is forced to use a public building, though free to choose which mobile phone to buy.

The point of acquisition of a product splits product life into two distinct phases: production and consumption. Up to the point of sale it is possible to talk about the production of the product (design, manufacture, distribution), after the exchange of money for goods we move into a phase of consumption including processes of appreciation and use for example. With a concept like uniqueness, value creation – the goal of the consumer – lies primarily in the consumption process, not in the production process. We say ‘primarily’ here, because it is clear that the production process must enable the consumer to see some kind of potential for uniqueness as we have defined it.

The requirement that the consumer be able see ‘potential for uniqueness’ in a product makes rather different demands on the designer or designers, contrasting markedly with the idea that value can be created in the production phases of a product by simple need-fulfilment. Indeed it is barely a requirement at all if it is impossible for the designer to know how uniqueness would be created by consumers of a particular product. Potential for uniqueness implies that value is created not, as Asaro suggests, ‘in a dialectic between design and use’, which considers consumption as little more than the consummation of existing needs, but in the growing relationship between product and product owner, however that might develop.<sup>22</sup>

Is this emerging uniqueness something that is denied by the ‘average’ need met by a participative design process? Consider the point of sale; the ‘publication’ of the product. We have mentioned that a product must have a ‘potential for uniqueness’ and this, we have suggested, must suggest a certain base value to the product, from which uniqueness can either flourish or wither. In attempting to meet an average need a participatory design process deliberately focuses on design issues of a certain type; practical, utilitarian, to-the-hand issues such as use, appearance, function, and ‘feel’; above all issues that resolve ambiguity. Now it can certainly be argued that these are important issues, but are they issues that provide a ‘potential for uniqueness’? It would seem not, since ambiguity would imply that there is still ‘reading’ to be done, and that manifests itself in a potential for the product. A design process that can preserve ambiguity – by the mechanism of association perhaps, or in skillfully manipulating symbolic constraints – would seem to have a distinct advantage over processes that seek to resolve ambiguity. And ambiguity is something that more often derives from an individual’s vision than from a representative group’s vision, although perhaps not exclusively. The potential for uniqueness resulting from a

participatory design process might, then, be an aberration rather than anything flowing directly from the process.

What we have here is a basic textual model of design; a model which draws on the basic production of a literary text: writing, publication, acquisition and reading. Many authors use this basic model to describe the process of producing products and technologies.<sup>23</sup> We use it here to show the close relationships between production, consumption and the creation of value. It is instructive to consider participative design in this light.

The idea of design as need fulfilment concentrates, not unreasonably, on the writing phase of the design process. Here the putative need for a design is established, providing the motive force for a product's development. The need is decomposed and developed, either by an individual or by participation, and, in the creative phase of the process problems are solved and a design and prototype produced. 'Publication' involves marketing and distribution for the product, perhaps referring to the needs that were 'uncovered' or 'constructed' during the writing process. What might be called a base value – what we have termed 'potential for uniqueness' – is established presumably dependent on marketing and advertising together with product reviews, consumer tests, peer recommendation, etc.

Up to this point it is possible to argue that a participative design process might have distinct advantages over an autocratic design process. We might imagine that the democratic values of the process might be inscribed into the product somehow and receive expression in the product's final form and/or functioning. Marketing literature might make reference to the participatory nature of the design process; the fact that the product was designed by people like *you*, the prospective purchaser, for ease of use. There might also be disadvantages. The product might lack a distinctive vision or the branding of a well-known designer or company. Marketers cannot refer to the genius that has (single-handedly!) solved previously thorny problems.

Convincing plays a large part in the design process, and particularly so in purchasing decisions. Unable to read off directly, in anything other than an economic sense, the value of the product (or the nature of the process that caused it), the prospective consumer is forced to rely on secondary information and the overtures of sales people and advertising to infer value. Faced with a long line of washing machines, fruit juicers, or MP3 players how is one to decide which design process had the best intentions, or which product resulted from a participatory design process? And if it is not discernable in the product, then to what degree can we say that the consumer really values those seemingly important needs being fulfilled?

For whatever concrete reason ("the colour matched the kitchen") – remember we are claiming that the underlying reason

is potential for uniqueness – the product is purchased and reading begins. The reading process – the use, the appreciation, the functioning, the feel, the smell, the texture, the manual, the way the object inscribes the user – creates meaning.<sup>24</sup> The product is commented on, it matches the kitchen units; it is easy to clean, although there are problem areas; it is reminiscent of the same thing my father used when these things first came out; we've had it ten years now and it hasn't let us down once; they've brought out a new version, but I prefer the old one. This accumulation of facts, experiences, and reflections, begin to create meaning. The product begins to have an aura of uniqueness about it.

The fallacy – the intentional fallacy – behind both participative and autocratic design processes, is that the product is purchased because the consumer sees it as a straightforward way of meeting a straightforward need. True the product demonstrably solves a real or imagined clutch of problems better than the next product, but rarely is the consumer even aware of these problems – unlike the designer, who is fully aware of the functional, emotive and aspirational associations that products have – let alone that they might be 'fundamental' to the proper functioning of the product. In a choice situation, it is plausible to imagine, the consumer chooses the thing that either has or promises unique value. The argument here is that this value is only created *after* the purchase of the product and not before. What is created before is a text waiting for appropriation, a text that demonstrates potential for uniqueness.

## Discussion

At the beginning of the paper we made a distinction between participative design and autocratic design (what we've also referred to as 'traditional' design). Now it is possible to see that autocratic design is susceptible to many of the problems of participative design; the assumption that design is about meeting needs that in turn create value for consumers is equally questionable. Tellingly what is missing from an account of autocratic design is the idea that an *average* need is computed. It may, of course, be the case that the autocratic designer thinks they have an average conception of user need, but the approach does not entail an average computation of need.

Is it possible to claim that all participatory design processes stem from ideological commitments? The example of the author bereft of ideas at the beginning of the paper shows one way in which participatory design can be used non-ideologically. A focused group of people can often provide insight into problems and suggest unusual solutions, which may in turn pique the creative process of the designer. This is arguably a more popular use of participatory design – or at least the most frequent outcome of participatory design processes – than its ideological form; an example of people being used instrumentally for their ideas, not as valuable ends in

themselves.<sup>25</sup> Put like this, however, all of participatory design would seem to be simply a special case of autocratic design. (One could argue that almost all examples of participatory design are simply cases of autocratic design since, as we pointed out earlier, some degree of organisation is required, which implies an organiser.) One explanation is that using a participatory design process stems from some sort of ideological commitment, even if loosely or unconsciously formed. Creative ideas inspired from participatory processes would, then, be happy by-products of a previous ideological commitment.

If we accept the last point, that positive outcomes from participative processes are by-products of those processes – the happy result of an ethically justified approach to designing, though not in any sense the primary motivation for using a participative design process – there are other positive outcomes to consider. These are the rhetorical effects of using a participative design process. We have already mentioned the idea that a design product might somehow embody and express the democratic values inherent in a participatory design process. This would seem to be one of the most convincing arguments for participatory design, and certainly not a positive by-product. There are, however, a number of ways in which participative design might play a rhetorical role in the product development process.

The first is that involving a representative group of users in the process of design might act as reassurance to the stakeholders involved in the development process; manufacturers, finance, marketers, etc.. Indeed one could easily imagine it being a requirement for the process, as in the example of film pre-screenings at the beginning of the paper. This would be participative design as financial risk-reduction, as a type of insurance in effect. The second follows on from the idea of the product expressing democratic principles. If, as seems plausible, a potential consumer is unable to ‘read’ democracy in a design product, then it is reasonable to assume that they could at least be convinced. This might simply be a salesperson pointing out how participation changed something about the product in comparison to a ‘conventional’ version of the product, but it could also be a whole selection of sales and marketing literature referring to the participatory design process and claiming the products goodness as a result. A recent development in this respect are products that use television programmes to evidence their participatory credentials.<sup>26</sup> Launching a film of the design process along with the resulting product might provide the key associative link between the democratic politics of the process and the value of the resulting product.

These are ways in which participative design can be used rhetorically to help convince consumers/stakeholders that they are buying an essentially good product. Of course the seduction can be justified but this leaves open the question of both the real

value of participative design and the ethical commitments of the designer/s involved in the process.<sup>27</sup> For participative design, the sort that adheres to the tenets of democracy, is essentially a consequentialist ethical commitment.

The argument, then, runs as follows. Adherents of participative design value the approach because it represents democracy-in-action, by association a 'good' thing. But participatory design is based on a number of tenuous assumptions. First, the questionable assumption of democracy as an unconditional good. Second, participative design assumes that the purpose of the design process is to elicit the 'needs' of the people participating and, by embodying these needs, value is created. This, however, ignores the fact that people are unable to make relative judgments of value in advance of seeing an outcome. Third, even if these needs could be shown to be 'real' needs, they are necessarily an average expression of the people participating and, by resolving ambiguity, thwart the uniqueness that consumers are shown to value. The paradox is that in trying to build on the values inherent in democracy, participative design restricts the creation of value in products. The conclusion must be that although users need designers to create value through the medium of products, designers don't need users in order to create those products.

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### Notes

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  12. 'Need' is taken here in quite a broad sense, and is meant to include concepts like 'wants' and 'desires'; in general terms it could be defined as a perceived lack of something.
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  20. Richens for example, lists utilitarian value, enjoyment, representation of interpersonal ties, identity, and self-expression. More pragmatically Norman concentrates on the idea of 'personalisation'. See: Richens, M.L. 'Valuing Things: The Public and Private Meanings of Possessions' *Journal of Consumer Research*, 21, (1994) pp. 504–521. and Norman, D.A. *Emotional Design: Why we Love (or Hate) Everyday Things* New York: Basic Books, 2003.
  21. Czsikszentmihalyi suggests that "the meaning of an object becomes realised in the activity of interaction." While Richens (op cit) maintains that "a possession's meaning is central to its value." See: Czsikszentmihalyi, M. & Rochberg-Halton,

- E. *The Meaning of Things: Domestic Symbols and the Self* Cambridge University Press, 1981.
22. *Op cit.*
  23. For example Grint and Woolgar write: “what [the product] is, what it will do, what its effects will be, are the upshot of specific readings of the text rather than arising directly from the essence of an unmediated or self-explanatory technology.” ‘Configuring the User: Inventing New Technologies’ in *The Machine at Work: Technology, Work, and Organisation* Cambridge (UK): Polity Press, 2000, pp. 65–94.
  24. Inscribing the user resonates with the concept of ‘ontological design’, the idea that human existence is defined in some sense, or at least made meaningful, by designed environments.
  25. Vredenburg et al (*op cit*) report: “Some characteristics of an ideal user-centred design process were not found to be used in practice, namely focussing on the total user experience, end-to-end user involvement in the development process, and tracking customer satisfaction.” Practitioners used participants as inspirational sources for the ‘ideation’ process.
  26. See Lloyd (2002) *op cit.*
  27. Deighton and Grayson distinguish between teleological and deontological justifications for seduction. See Deighton, J. & Grayson, K. Marketing and Seduction: Building Exchange Relationships by Managing Social Consensus, *Journal of Consumer Research*, 22, 1995, pp. 85–86.