

# Captology: A Critical Review

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**Abstract.** This critical review of B.J. Fogg's book *Persuasive Technology* regards captology as an eclectic and formative work. It summarises two other reviewers' work and identifies several new strengths. It scrutinises Fogg's functional triad - computers functioning as tools, media and social actors - and some categorical changes are recommended. It investigates further Johnson's concerns about specific ethical omissions, nominating a new term, *compusuation*, for the resultant but unintended, exogenous behaviour/attitude change effects of captological design. The review commences to more carefully define what constitutes persuasion and draws attention to the distinction between persuasion techniques in general and the behavioural changes that result from advocacy and education. The reviewer concludes that a fundamental ethic be that the designer's intent be exposed at the commencement of the user's engagement with the program and proffers the idea of persuasion resulting in a new conviction, induced by others, as a helpful definition of persuasion.

## 1 Introduction: Overview of the Strengths and Weaknesses of Fogg's Analysis

In 2003, B.J. Fogg published a book, *Persuasive Computing: Using Computers to Change What We Think and Do* [1], it is a book which bravely brings the association between computers and persuasion to topical debate. There are two recent reviews of this book. The review by Robert Johnson [2] highlights several shortcomings. In particular, captology presented several areas of ethical concern for Johnson, notably the work's design focus. Johnson says that while 'the book portends to be interested in end users – office workers, teachers, students (young and old), and the general public - ... in practice, the book is designer-centred and system-centred'. Hence, the omission of significant user-testing and user-input into the development and refinement of captological design is regarded as a serious oversight by Johnson. Such an omission is not at all in keeping with current user-centred, useability-design philosophy. Furthermore, Johnson observes that because, as Fogg writes, 'Captology does not include unintended consequences: it focuses on the attitudes and behaviour changes intended by the designers of interactive technology products' [2], an ethical design impasse is created. Responsible, user-centred design necessitates a sound examination of both the intended and unintended consequences of the technology and this is, in part, assessed by the useability testing procedure that is now

almost mandatory for information technology designers (theoretically derived from Suchman's [3] interpretation of Heidegger's work).

In a kinder appraisal of the book, Anastasis Petrou [4] thought that the ethical problems persuasive computing confronts had been adequately addressed by Fogg and she highlighted some of the work's particular strengths, for example, the seven types of persuasion technique particularly suited to the computer medium (p1169 of [4]). In brief, they are: reduction, tunnelling, tailoring, suggestion, self-monitoring, surveillance and conditioning.

My own review of *Persuasive Technology: Using Computers to Change What We think and Do*, shows that Fogg's ethical reminders are at this point in time, 'short reminders' (Petrou's words), and not soundly, philosophically and theoretically, incorporated into his discourse. This omission, in part, probably stems from the seminal status of the work and its presentation to date as an essentially eclectic compilation, garnering all ideas closely and remotely related to the topic of 'computers and persuasion'. For example, omitted is the essential definition of what actually constitutes persuasion and a sound analysis, in a more rigidly-defined context, of what constitutes an ethical application of 'persuasion' principles. Even more importantly, one specific generic definitional concern relates to the language used prolifically throughout the text, a text that lazily attributes an autonomous subjective status to computers as agents of persuasion. Computers per se are not subjects, they are objects. They cannot of their own volition persuade: they are machines that perform their designers' intent. The acronym, captology, 'computers as persuasive technology', is in fact nonsensical and is indicative of a trend many information technology writers adopt: anthropomorphising their machines. Lexicologically, it is more appropriate to study the relation between computing and persuasion as 'computer-mediated persuasion'. Fogg dismisses the idea of categorising 'captology' as such, as a matter of being relegated to an incorrect discipline - computer-mediated communication, CMC - preferring to relegate it to the domain of human-computer interaction, HCI (p16 of [1]). Both design endeavours overlap significantly, but correct definitional assignation requires an examination of fundamental lexical definitions, and should not be confused with the naming of various disciplines or schools of thought.

However, there are appealing and redeeming aspects to Fogg's compilation: these include the many examples of what I prefer to call 'enhanced useability' evidenced by Fogg's guiding research strategy that asserts 'you can create more likable and persuasive interactive technology by leveraging principles from social psychology'. These principles include: the use of praise; the creation of strategies to enhance a sense of affiliation and similarity; simulating personality traits; and, among others, harnessing the principle of reciprocity (see Fogg's Chapter five [1]).

Fogg's review of the potential influence of 'simulations' is enlightening and he demonstrates where:

*Simulated environments can persuade through creating situations that reward and motivate people for a target behaviour; allow users to practice a target behaviour; control exposure to new or frightening situations; facilitate roleplaying, adopting another person's perspective (p63 in [1]).*

There is also a wonderful list of factors that contribute to site credibility (p147 – 181 of [1]). Another strength that both reviewers noted is Fogg's 'functional triad' which they see as being a useful conceptual design tool. However, on close examination, the triad, as it now stands, seems to incorporate several 'categorical' or definitional errors and so, at this stage, the idea does not stand up to close theoretical scrutiny.

## 2 The Functional Triad

Fogg describes the '*functional triad*' as follows:

*The functional triad shows that interactive technologies can operate in three basic ways: **as tools, as media, and as social actors**. These three functions capture how people use or respond to virtually any computing product,...*

*In their role as tools, the goal of computing products is to make activities easier or more efficient to do. ...*

*There are two categories of computers **as media**: symbolic and sensory. Computers function as symbolic media when they use symbols to convey information (for example, text, graphics, charts, and icons). They function as sensory media when they provide sensory information – audio, video, and (rarely) even smell and touch sensations. ... While both symbolic and sensory media can influence people, captology focuses primarily on computers functioning as sensory media – especially computer simulations – because in this role, computers have unique capabilities to provide interactive experiences that motivate and persuade. ...*

*The third corner of the triad depicts **the role that computers play as social actors or living entities**. When people use an interactive technology, they often respond to it as though it were a living being (p 25 – 27 of [1]).*

### 2.1 Tools

There is some confusion, notably in the invention of the idea of a 'functional triad', about whether captology is the 'tool' of users or designers. Clarifying the subject of captological endeavours will be important to avoid the ambiguity of meaning that surfaces in Fogg's work. Does a computer function as a persuasive 'tool'? If the tool is something we use to achieve an objective we have previously independently established, does the user's application mediate persuasion? The answer is 'no'. For captological purposes, to facilitate persuasion, the computer is the tool of the designer, not the tool of the user. The computer is the mechanism for conveying, or mediating, its designers' intent. If the user chooses to follow a program and chooses to adopt its semiotic proffering to achieve a desired new behaviour, value or attitude, then the program may be called a user's tool.

### 2.2 Medium

A categorical error happens with the use of the category 'medium/media' as one of the triad's functional elements. Consider this: in all functions the computer operates as a medium, using various forms of media to convey its designer's purposeful information.

Medium, by definition is ‘the means by which something is communicated’, or ‘the intervening substance through which impressions are conveyed to the senses’ [5]. To aid any ‘tool-like’ operations (for example, a calculator) visual, textual, audio qualities and numerical symbols can all be used. To create a simulated social presence various media are harnessed. If Fogg’s definitional use of the term ‘*medium/media*’ relates primarily to ‘*computer simulations*’ which involve the use of life-like scenarios ‘*to create a compelling experience to persuade people to change their attitudes or behaviours*’, then the functional persuasive element is not the ‘medium’ or the media, but the ‘compelling’ simulated experience. Fogg proposes three types of simulation: ‘*simulated cause and effect scenarios*’, ‘*simulated environments*’, and ‘*simulated objects*’. These ‘simulations’, I believe, more accurately suit the definitional purpose proposed for the ‘*medium*’ element of captology’s ‘*functional triad*’ (p61 – 89 of [1]).

However, a further quandary is introduced by saying persuasion has happened and has been effective through the use of the Fogg’s functional triad, and in particular, simulations. Does the drink-driving simulator ‘persuade’ its users to avoid drink driving (p79 – 81 of [1]) or rather, does it educate about the hazards associated with driving under the influence of alcohol and so create a greater awareness? The fact that one is knowingly participating in such an exercise suggests that persuasion is less of a force than is general curiosity, enquiry or self-education, or even ‘window-shopping’. Fogg (p147 of [1]) also writes: ‘...you’ll see that many sites seek to persuade users in some way ...’. But this could be rewritten as ‘many sites offer a service or proffer goods for sale’. Persuasion is more powerful than a mere proffering: it seeks to convince people to adopt new ideas and behaviours. Should we equate people’s browsing (which indicates that they are keen to explore and experiment) with that they are being persuaded? Should we equate curiosity, the thirst for new knowledge and experience, as a function of persuasion? No. People engaged in these activities are not necessarily being swayed from their own convictions, rather, they are enriching their conceptual schemata of the world.

### 2.3 Social Actors

The triad’s third functional element, ‘social actors’, also presents categorical and definitional challenges. Fogg’s preliminary work tells us that:

*...as social actors computers can persuade people to change their attitudes or behaviour (p27 of [1]). My own research ... confirms that people respond to computer systems as though the computers were social entities that used principles of motivation and influence (p90 of [1])...at times people do respond to computers as though they were living beings. (p89 of [1]).*

In my opinion, these observations and conclusions involve a false assumption. That we respond to computers in such a fashion is more probably a result of us being human, socially gregarious beings who do not possess ‘synthetic’ non-social communicative alternatives, rather than to have actually incorporated a belief that the machine is in fact a real social actor. It is eminently probable that we would respond similarly to any object that replicated our human social mannerisms. We, being human and social creatures, have no real choice in the matter; we have no inherent mechanical mode of communication (unless we imitate mechanistic objects themselves, in a manner similar

to the lyrebird's 'chainsaw, trail bike and waterfall' warbles). However, we can create lexical and logical solutions by inventing new words to describe mechanistic, artificial phenomena in non-social language:

*macrosuasion*, *microsuasion*, *captology* and *compusuasion* (defined later) are examples of such.

The social actor category also presents a definitional error. How we use the language is incredibly important. We agree on shared meanings (called definitions) and a great many constructive communication precedents follow. If these inherited, carefully defined meanings are changed, all of the established conventions associated with the original definition are challenged and logic and truth can suffer. Correct extrapolations follow correct theory. The same applies to definitions: if we can provide a new body of work with correct fundamental definitions, the consequent applications, categorisations and conclusions will be logical, with all of logic's commensurate benefits of prediction, inference, deduction, reduction, induction, adduction and so forth. If the basic terms involve contradictions or convey unintended meanings, then confusion will result from the subsequent application of these terms.

We humans are social creatures; computers are machines. Excluding the hermit, we cannot exist in isolation from each other, but even the hermit's isolation is only apparent in relation to the absence of the people he or she excludes. If the machine has the function of simulated social presence incorporated into its design, then the term should be hyphenated, i.e. social-actor. This conveys a slightly different meaning to what we know to be a human-only designation, a social actor. It means that the social is feigned and so may be more appropriate in the context Fogg intends. But, to my mind social-actor is still inadequate: an actor is a man, so social-simulation is a better.

This category also involves a semantic error. Machines are not 'socializable' because they are not social creatures; they are not fellow human beings. In the words of Dr Mitroy (pers.comm. 2006) 'The computer does not exhibit the entire range of responses exhibited by humans acting under free will'. That a computer can be designed to recognize aspects of the surrounding environment and monitor its own mechanistic processes are man-made, imitative functions and mechanistic phenomena. To infer 'personality' is an incorrect inference. That it exists is a contrivance. Fogg's application of principles learnt from social psychology fall prey to this error. For example,

*If something is physically attractive, people tend to assume they also have a host of admirable qualities such as intelligence and honesty'; and, 'physically attractive computing products are potentially more persuasive than unattractive products'; ... 'if an interface, device or onscreen character is physically attractive... it may benefit from the halo effect; users may assume the product is also intelligent, capable, reliable, and credible' (p 90, 93, 94 in [1]).*

Fogg says that social presence can also be derived from simple dialogue boxes without any onscreen characters, voices or artificial intelligence. These sort of 'cues' are derived from an extrapolation of the results of research to understand human traits and then simulating these traits to create a sympathetic human/machine dynamic. But the search for the enhancement of social cues that exacerbate and strengthen our innate tendency to make the inference of 'sociality' in computers rings alarm bells.

These ‘social cues’ are features normally associated with living creatures: physical features like faces, eyes, voices and voice tonality and the type of language employed; social dynamics, like taking turns offering praise or answering questions; adopting roles such as that of an advisor, doctor, friend, and so forth (p90 of [1]). Using this concept of social actor uncritically, if we are not careful, will perpetuate an illusion, compound Baudrillard’s [6] Procession of the Simulacra and cause us to fall victim to Rene Dubos’ [7] warning that humans continue to adapt to maladaptive situations.

There are many dangers associated with being beguiled into believing we are interacting with genuine personality. But do we interact with computers, do we interact through them or do we simply use them? Fogg (p16 of [1]) says that ‘the computing product is a participant in the interaction’. I beg to differ.

### 3 Machines and Social Presence

This sort of rationality and the lexical legitimisation of a social presence, when it is only simulated, is sometimes attributed to Orr’s [8] ethnographic study of the way computer technicians work with their machines and converse about them amongst themselves. It is a study which, in turn, cites Bruno Latour’s early assertions ([9] & [10] in [8]) that machines participate in society. The summary introduction to Orr’s book tells us that: *‘machines are a social presence through their participation in this social world’, and, ‘The social interaction happens, in some sense, and happen in the way they happen because the machines need to have technical things done to them. The technicians have the ability to do those things and the rest of the relationship follows from the contact between the customer’s need and the technician’s ability’* (p3 of [8]).

Orr himself quotes several authorities that support this perspective, including Latour:

*Latour tells us that machines prescribe human behaviour, forcing us to do certain things to use the machines or other things to accomplish our ends without using the machines. This is part of his argument that machines participate in human society to such an extent that neither technology nor society can truly be considered apart from the other (p 105 of [8]).*

But it is our engagement with the machine, not the machine’s engagement with us, that gives the semblance of sociality. The relationship is not one of equals, it is a utilitarian association, the computer is our machine, it is like a mobile library, we engage it for its functional purposes. It is not capable of independently instigating a genuine relationship, nor any relationship, without other human beings providing it with that simulated capacity. It is odd that Orr’s ethnography (in particular the summary introduction) is attributed and credited with promulgating this type of semantic rationalisation when he also presents the following principles which fairly and squarely replace the interactive initiative with humans, not computers. Such a thought is, I believe, a more correct representation of his own, considered perspective represented in more depth in the body of the work:

*The machines never participate with intent... Machines represent the intent of their designers and so are an extension of human interaction with humans. Furthermore, intentions and their results must be considered in their social settings;*

*the machines must be seen simultaneously as products of the social context of their design and production and as participants in the goals of their users* (p 105 of [8]).

Weizenbaum's [11] horror at discovering that inexperienced computer users actually accredited the program Eliza with independent personality and intelligence shows that this mistake is still possible, but, I believe, less likely today when most users are more familiar with the machines' internal workings and aware that they are interacting with designers' programs. However, if we allow this lexical duping to continue, we may indeed be tempted to say that computers do persuade us. But humans deserve better than to be duped.

## 4 Persuasion and Compusuasion

If we agree that some computer products and programs can mediate 'persuasion' (and to establish this clearly, a new conviction or behaviour, that intended by the designer, would have to have happened: this would be a good measure of whether one had been 'persuaded') Fogg has coined some appropriate terms for the composite elements of computer-mediated persuasion (which we should always clearly distinguish from education and self-education): *macrosuasion* (p17 of [1]) which Fogg used to describe the overall persuasive [designers'] intent of the product, in other words, the specific behavioural or attitudinal change intended by the designers; and *microsuasion* (p19 of [1]) which incorporates smaller persuasive techniques to achieve the macro-goal (such as the rewards used to help users stay on a site, or with a task, longer). It is my understanding that *microsuasion* techniques could be regarded as similar to those persuasive elements used by rhetoricians and mastered in sophism (such as the appeal to emotion, repetition, association and band-wagoning). The ethical omission, that which ignores exploring unintended changes in attitudes inherently associated with or caused by the product, is both a theoretical and a design oversight. It is true that unpredicted, unforeseen and unintended consequences categorically do not belong with having been persuaded, because genuine persuasion results in the adoption the new behaviour intended by the designer. But if the program results in unforeseen, induced behavioural changes, it is appropriate for the discipline to assume responsibility and to name such phenomena. I nominate '*compusuasion*' as an appropriate term.

## 5 Can We Plan for New Technologies?

That a modern exploration of new computing potential can omit an assessment of what might be the 'exogenous and unintended impacts' of a technology specifically designed to influence people's behaviour is representative of a far more comprehensive problem for society at large. Axup [12] says the lack of planning associated with comprehending and predicting the behavioural influences of many new technologies (including: those derived from innovative architecture; Napster – an easy-to-use software program – which enables 'the easy exchange of music files via the internet [and] results in large amounts of stealing'; mobile phones; the news genre; many kinds of drugs; transportation; television; and the internet), is common.

Axup notes, in particular, the role zestful (largely unscrutinised?) marketing strategies have played in accelerating the distribution and adoption of such technologies. But he is more concerned with technology that is created ‘with the specific aim of altering social behaviour of a target group of users in a particular way (which) could be considered ‘social engineering’, particularly ‘persuasive computing’ and ‘affective technology’... Moral and ethical issues rapidly come to mind as one considers the idea of technology being used to influence people’s behaviour. Whether it happens consciously or unconsciously really isn’t the issue, although the latter might be more dangerous. In either case, society is affected. ... And yet, in retrospect, it seems like there should be ways to predict that the telephone would revolutionise the entire world and that the introduction of automobiles would have environmental effects. Some level of accurate prediction must be possible’ [12].

Accordingly, Axup proposes an ‘impact statement’ for new technologies. But such a statement, specifically designed to predict and thwart deleterious exogenous effects, encroaches on what we know to be the domain of the ‘wicked-problem’ and the difficulties associated with such prediction-based assessments are numerous as Rittel’s [13] wicked-problem thesis showed.

Rittel observed that policy planning’s systems analysis had evolved from the examination of questions like ‘*what are they made of*’ to ‘*what do the systems do*’ to ‘*what should the systems do*’, leading him to conclude that such analysis involves confronting ‘wicked-problems’ whose resolution, Rittel suggests, ‘*rely upon elusive political judgements*’.

Rittel describes the wicked-problem as being characterised by at least ten distinctive properties evidencing some of the following phenomena:

- ‘*no ends to the causal chains*’;
- ‘*that in order to describe a wicked-problem in sufficient detail, one has to have developed an exhaustive inventory of all conceivable solutions*’;
- ‘*solutions to wicked-problems are not true or false, but good or bad*’;
- ‘*...any solution, after being implemented, will generate waves of consequences over an extended, virtually unbounded, period of time*’;
- ‘*every implemented solution is consequential...large public works are effectively irreversible, and the consequences they generate have long half-lives*’;
- ‘*despite seeming similarities among wicked-problems, one can never be certain that the particulars of a problem do not override its commonalities with other problems already dealt with*’;
- ‘*marginal improvements do not guarantee overall improvement*’;
- that those who address wicked problems are ‘*planners (are) liable for the consequences of the actions they generate*’: planners do not have the luxury of the solution proffered being ‘*only a hypothesis for refutation (Karl Popper)*’.

Rittel was concerned that we have no definitive theory to help us determine a ‘*societally best state*’ which, in turn, could serve as a guide for us to assess the futuristic impact of new developments and policies (p38 of [13]). Rittel painted a bleak outlook, but his description of the ‘wicked problem’ and his recognition of the complex, consequential nature of progressive and remedial societal initiatives remains useful, although his was seemingly a worldview bereft of familiarity with ethical



philosophy. To harness all of the strategies he mentions (like entrusting *de facto* decision-making to the wisest, most knowledgeable professional experts and politicians, and biasing decisions towards utilitarian outcomes) would be regarded as responsible action today. We have also learnt from ‘wicked’ consequences, such as his aforementioned considerations, that it is appropriate for the scientists, the politicians and those who will be affected by the technology to come together beforehand to exercise collective ‘judgement’ about which ‘solutions should be pursued and implemented’. Such an, albeit unwieldy, combination of people provides a more comprehensive analysis of the potential effects of new technology.

Where we now genuinely harness public consultation, exercise adaptive management, facilitate social learning and apply multi-stakeholder negotiation (B. Campbell, *pers. comm.* 2005), we find we can reduce the unintended and unforeseen consequences of social planning. We can also constructively use hypothetical scenarios and personas to help anticipate likely developments, but sometimes neglected is an older and often reliable method of assessment: that is, to gauge impact by current established philosophical, ethical, moral and human rights principles. These guiding principles reflect the pinnacle of a society or culture’s collective and responsible wisdom. This knowledge is the value of learning offered by schools of ethical and philosophic enquiry (now often abandoned by universities succumbing to economic rationalism). Where we may not be able to accurately predict the future we can learn much by applying principles established by ages-old hindsight. It is at this juncture that a more comprehensive ethical foundation could be considered.

## 6 The Ethics of Persuasion

Ethical principles can be defined as right and responsible action. Philosophical, theoretical, ethical frameworks and established moral codes provide us with guides to minimise harmful consequences. And while Axup, Johnson and many others, mention their concern about the ethical challenges presented by new computing developments, I am concerned that the reliance on ‘*the axioms of [post modern] individualism*’ (which can induce the sense of doubt and uncertainty about ethical rectitude) leads us, through logical extension of relativism’s fundamental premises, towards Nihilism: a nihilism which necessarily includes the rejection of moral principles and embraces the extreme scepticism that nothing in the world has a real and objective existence: it is all subjective. Post-modernism’s subjective individualism was popular, easy to digest rhetoric, but a study of ethical and moral principles and emergent human rights can take us beyond the nihilistic entrapment of subjective individualism [14]. Fogg’s book, while touching on ethical issues, leaves room for further consideration: we are left with the huge philosophical question, is computer-mediated persuasion ethical? Is it ethical to intend to change a person’s attitude, belief or behaviour? It is ethical only if they are aware of the intention from the outset of their participation with the program. Anything that occludes this function is a form of manipulation which in turn can lead to coercion and be associated with propaganda and information that seeks to thwart and distort individual autonomy and even sound reasoning. This assertion is based on Hart’s natural right theory that if human’s have one fundamental inalienable right, it is their right to freedom [15], specifically freedom of choice. Such freedom

allows us to individually and collectively (through insights gleaned from others) resolve cognitive dissonance and helps create personal autonomy.

Persuasion that operates without the user being aware of the programmers' intent, it could be argued, might be ethical if the change in attitude, behaviour or belief is motivated from the perspective of wisdom, benevolence and genuine care for others. But would not this sort of benevolent intent be better constructed and represented by the sound reasoning we know as advocacy or even education, where intent is exposed at the outset or revealed through simple inquiry about course content? Advocacy, in mass media terms, differs from propaganda in that it implores a right way, a better way of acting [16]; education draws upon the body of truthful and established, peerreviewed fact. Exposure to both is cognitively enriching and can result in attitude, belief and behavioural change, but both remain respectful of the individual's own ability to synthesise the offerings provided by new information into a worldview that is meaningful for that individual. If they do not, we decry the resultant impact as 'brainwashing'. Convictions that arise from misinformation we call 'propaganda' and such misinformation can result in prejudice, intolerance and stereotypical judgements. We can distinguish the behavioural changes that result from advocacy and educational endeavours from the persuasion efforts of brainwashing and propaganda because advocacy and education are respectful of primary moral criteria that can be missing from a simple exercise in the techniques of persuasion: justice (in the sense of respect for all persons); veracity, in the sense of established fact; and truth, in the sense of personal honesty. These distinctions are important to our exploration of how to maximise the beneficial effects of our engagement with computerised, multi-media technology.

My own conclusion is that captology requires an immediate ethical safeguard and this could be fulfilled if the purpose of the 'persuasion', the *macrosuasion's* intent, was exposed at the beginning of one's engagement with a program. It would then be possible for the user to determine the program's relevance and exercise their right to accept or reject its offering. In Australia, this little hurdle has been overcome in the print media by the inclusion of the clause 'Advertisement only' and similar clauses could be devised to inform the user of the captological intent of the program or simulation. This is the true purpose of ethical and philosophical enquiry: to devise appropriate guiding principles.

## 7 Defining Persuasion

It is useful for an academic text, such as Fogg's offering, to distinguish very clearly between persuasion and education (and self-education). Education involves imparting established factual information and theory to its participants. We do not call the sharing of this information 'persuasion'. Self-directed enquiry is not persuasion. Persuasion is associated with rhetoric, a singular perspective that might or might not be correct, which the disseminator wishes his audience to adopt as their own. The techniques of rhetoric are the effective persuasive elements, some of which may help to circumvent rational thinking.

At the most primary level of involvement, if one turns on the machine, one is choosing to interact. Does not this act preclude the machine from the domain of

persuasion? It is important to note that if we personally seek information to help expand our own worldview or achieve a pre-determined goal, then our exercise of that choice does not constitute us being persuaded by another: we have chosen this course of action of our own volition. Without having made this distinction, the lack of sound definition relating to what constitutes persuasion results in, I believe, incorrect categorisations and confusion.

Fogg tells us that ‘persuasion scholars don’t agree on a single definition of persuasion’ and that he defines persuasion as ‘an attempt to change attitudes or behaviours or both’. But, if the attempt has not succeeded, we will not have been persuaded.

A strict dictionary definition tells us that persuasion embodies ideas like: To cause another person or one’s self to believe; convince, induce’ and sometimes ‘lure, attract, entice’ [5]. I think some confusion is caused by the inclusion of the phrase ‘to cause one’s self’. Does one persuade one’s self? If one does, surely one is responding to a predetermined, self-directed goal - some thought already present in one’s conceptual, cognitive structure - and is doing something one has already determined will be of benefit? This sort of action is then not representative of the required change in belief or attitude induced by another to achieve this other’s particular behavioural- or attitude-modification goal. So, to persuade involves specific intent from an outside agent to cause a specific, new or previously untenable belief, attitude or behaviour to be incorporated into the recipient’s cognitive structure. It involves the targeted person adopting a new direction, one that is foreign to their own conceptual framework and behavioural repertoire. Nilsen [17] defines persuasion as ‘the inducement in others of belief or action’. I am happier with this definition. Effective persuasion results in a change to a person’s behaviour, attitudes or beliefs through the influence of another. What seems to be of great significance in this idea is the intent to cause a particular and specific, predetermined and previously untenable change, and that it comes from someone else’s conceptual framework.

## 8 Conclusion

Captology is an exciting concept. It has seemed important to scrutinise captology in its formative stages to ensure that its future application will result in benefits to humanity. It is possible that captology’s microsuation principles could be harnessed to create interactive sites that serve to help humanity achieve the realisation of concepts like the ecological imperative: to become whole (in the old-English sense of a ‘hale’ human being), to create wholesome communities and to rehabilitate and restore ecosystems to their self-perpetuating and evolving state of continually enriched biodiversity [16 & 18]. At this point in human history, the restoration of the biosphere requires a commitment that goes well beyond the reach of governments and non-government agencies and to paraphrase the words of Wilbur Schramm, the attributed founder of mass communication theory, how fortuitous that in our hour of greatest need we have the communication potential to help us tackle successfully the enormous challenges before us.

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