

## **Book Review: The Media Equation**

Essay on book review of  
**"The Media Equation"** by Byron  
Reeves and Clifford Nass

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## Main message

The main message of the book is that media equals real life when regarding emotions and social rules. Computers and devices are treated by people like they were social beings, part of our social world. From that follows many design implications derived fairly directly from the rules of social and personality psychology according to the authors. The arguments are supported with a line of experimental tests. The tests are designed using same methods that have already been used in a different context: in psychology when these phenomena have been demonstrated in human-human interaction.

## Media and manners

**Manners.** First the authors cover manners, in other words the social conventions in interacting with others that are considered to be right. They argue that the computers should be polite and comply with “the rules of etiquette”, since people also behave this way towards computers, which they prove with an experiment. They also warn that people might not be quite sincere when testing and evaluating products because they are unconsciously following these rules. Also, different etiquette in different cultures is acknowledged.

**Space.** The authors argue that in the human-computer interaction, just like in the interaction between humans, space is an important factor defining the ongoing situation. Getting closer enhances the emotional charging of the situation. More attention is paid to the pictures that appear to be close, and they are also remembered better. The authors show that the same goes with pictures represented by a computer and suggest that this information might help while designing e.g. character agents. Also, the film and television directors’ experience of casting the most fitting actors and of adjusting the emotionality of the scene with approaching or withdrawing camera could also prove to be useful while designing to other media.

**Flattery and criticism.** People like to be praised and that according to the authors should also be taken into account in designing media. If computer praises the user, she thinks both the computer and herself did better job in the assignment. People will like a praising computer more and think it functions better. People also feel that a computer praising others or criticizing itself is more likeable but less intelligent than a person criticizing others. The authors claim that designers of new interactive media usually emphasize the intelligence of the product. This might make the product to appear less likeable, though.

## Media and personality

**Personality of characters.** The authors describe two most important categories of media personalities: dominance/submissiveness and friendliness/unfriendliness. They argue that the category of media personality is readily identified by the people who experience them. Authors have made two studies, one about how kids describe personalities on television and one about how adults describe cartoons. Both studies showed that people are able to recognize different personalities with the help of only a few hints e.g. eyes drawn into paper. These studies reveal that it is possible to design characters for media with basic personality types. People like identifiable personalities even if they might not like the personality once it’s identified. It doesn’t matter if the expressions of personality are creative, even totally novel and irreproducible in the real world, but all features like appearance, language and attitudes must be consistent.

**Personality of interfaces.** People like to interact with personalities that resemble their own. The phenomenon is called as the “law of similarity-attraction”. Authors presents few studies where they find out three rules. Firstly, people perceive a computer that uses dominant text as having a dominant personality, and a computer with submissive text as having a submissive personality. Secondly, dominant people say that dominant computer is more like them than the submissive computer and the other way around. Thirdly, dominant people prefer the dominant computer, while submissive people prefer the submissive computer. Authors had given these two personalities to computers by changing following features: how computer answers your request and if it lets you make a choice or not. The key implication of this study was that personality is easy to create. The conclusion is that creation of personality does not depend on representations that try to resemble reality.

**Imitating personality.** In human to human interaction, imitation is the sincerest form of flattery. If you really want to make people feel good, change your behavior temporarily to resemble their way of acting. Following this structure, authors contained computers with basic personalities which changed while user were working. In the studies they found out that dominant people prefer a computer that starts out submissive but then becomes more dominant than a computer that is consistently dominant. Also submissive people prefer a computer that starts out dominant but becomes more submissive rather than a computer that is consistently submissive. When the computer changed to match the participant's personality, they thought it was more competent, and the interaction was significantly more satisfying intellectually. Even if the computer changed to opposite direction, it still got some credit for attempting to change. Authors says that media should adapt to the personality of the user. Even a poor system for following a user's behaviour may be better than no system at all, even if it's reversible.

## Media and emotions

**Good versus bad.** Every primitive response includes an evaluation of whether the thing is good (positive) or bad (negative), which has been a precondition for surviving. According to previous studies, the right hemisphere responds to negative experiences and the left hemisphere to positive experiences. The authors suggested that the brain activity varies the same way when the experiences are mediated. They proved this by measuring the brain activity from people who watched positive and negative situations taken from TV-programs.

**Negativity.** People don't like negativity because negative experiences are unpleasant. At the authors' experiment the negative advertisements were liked less than positive ones and were also remembered better. Negative information demands more attention because the possible consequences are more fatal. The authors proved this by an experiment that showed that the negative messages delayed the reaction times for the secondary task. Negative experiences are remembered better because of their intensity. The authors proved this with an experiment in which the negative material was remembered more in detail than the positive one. Negativity increases the likelihood of remembering things that happen after the experience and reduces the amount remembered things that happened before the experience. That's exactly what happened in authors' test. The questions concerning the events after the negative experience could be answered better. The material preceding the negative material was forgotten. So people listen better what is to follow when countering negative experiences and they are also willing to forget what happened before the negative experience. It's possible to increase the effectiveness of a message by using negativity. But you have to be careful, because even if you manage to improve the attention and memory, the experience might also be very unpleasant.

**Arousal.** Emotions can be divided in two aspects: valence and arousal. Valence is the negative-positive –dimension of emotion and the arousal is its volume level, or the intensity. So the emotion is always either good or bad and the arousal defines how good or bad it is. The authors claim that these dimensions of emotion are responded the same way in media as in real life. Their experiment proved that when the experience gets arousing, it's easier to

define if it's good or bad. So when a material is extremely good or bad, it's also very arousing. The experiment also proved that more arousing emotions are also better remembered. The authors claim that it's not only the negative things that are remembered. The positive emotions that have strong intensity can be remembered as well. Arousal is not a property of things, but it happens within people's minds. Therefore it varies among people. The arousal level can transfer from an event to another, because it's not possible to set the arousal at zero. However, it's possible to manage excitement.

## Media and social roles

**Expertise.** When people need help, they rely more on person who is specialist at the area in question. The authors suggest that the same thing would concern media. They managed to prove that media that is labelled as an expert on some area is perceived more competent than a media that is labelled to be a generalist. For example news on the "News television" were considered more important, informative and interesting than on the "News and entertainment television". Surprisingly enough even physical qualities (such as clarity of the screen) can be perceived to be better in an "expert" media than in a "generalist" media.

**Teamwork.** Psychologists have shown that being part of a group has an enormous effect on team members' attitudes and behavior. Team mates have a feeling of togetherness and they feel more similar to each other. They also cooperate more and respect each other more. The authors found the same principles when studying teamwork between human and computer. People changed their behavior when they worked as team with computer. The effect of teamwork-status can be divided into two major categories, *Identity* and *interdependence*, of which interdependence has a stronger impact. Basically, if computer is thought to be part of the team, as opposed to being just a device available, the team members perceive the computer being better, more helpful and more agreeable. This affects the team's behaviour and decisions as well. The explicit stating of the meaning of the computer (interdependence: one has to work together with computer to be able to succeed) has stronger impact than just identification (i.e. blue computer, blue clothes on team and saying that this is a team). However both categories yield positive results and can be used simultaneously for maximum effect.

**Gender.** The gender stereotypes already known from psychology can be adapted also to media. The authors' experiments proved that male-voiced computers were more intelligent and believable when talking about computers and female-voiced computers when talking about love and relationships. In general male-voiced computers were taken more seriously but female-voiced computers were less liked.

**Voices.** As in real life, in media two different voices heard from same source are considered as two different persons and the same voice coming from two distinct sources is considered as the same person. There's a problem in using voices, because they always carry along stereotypes that might not match the information they are giving. In addition a person considers the voices from the same media as a group and is trying to find out the relationships between the group members.

**Source orientation** is actually quite influential characteristics, when designing systems which use pictures of characters and/or voices. As in real life, having lot's of people in one place, makes it hard and tiresome to get to know and keep track of everybody. In systems, big amount of personalities makes it hard to maintain coherent understanding. Also even small nuances in voices (tiredness, angeriness, happiness, etc) are picked easily, which makes creation of a system troublesome. Third consequence of orientation-effect is the fact that computer (software), not the creator of that (somewhere behind it all) is seen as the source of events, thus when people compare two identical computers, they may prefer one over another because they think it eg. works better.

## Media and form

**Image size.** The basics of cognitive science apply. The closer and the bigger the screen is, the more intimate and attention-taking the computer and/or media is. There are, of course, limits of sanity in this.

**Fidelity** (i.e. level of detail) in screen is not very crucial factor when measuring appeal, image size is the deciding factor.

**Synchrony** of sound especially (movies as well) is very delicate matter. People tend to perceive attitudes and meaning from existence and absence of delays and from the tempo of the message. This is especially valid when the message can be interpreted in multiple ways.

**Motion.** The speed of motion in screen has its limits. Short fast sequences can make the message interesting, but continuous fast motion becomes tiresome and makes people to “shut down” observation. Too much slowness and people will become uninterested.

**Cuts.** As with motion, the use of cuts in movie makes it often more interesting, but using too many too often results in inability to follow.

**Subliminal images.** As proven by cognitive science, displaying short visual message in between some other program for a duration of less than tenth of a second results in people perceiving and unconsciously agreeing to the message, without knowing and realizing it. Clearly, this is strongly against ethics of humanity and falls into category of evil manipulation.

## Evaluation of the book

The authors are defending their arguments by presenting experimental studies which have been published in scientific papers. Since this book is written also general public in mind, the authors are not reporting the studies in scientific accuracy, references are provided in the end of the book. Not having seen the original reports, it's very hard to make any inferences of the reliability and validity of these studies.

Many things they say feel very familiar from one's own experience and even seem obvious after they have said it. On the other hand they are not things you'd come easily to think of since social rules are deep in our culture and we behave according to them partly unconsciously.

Though the authors show many interesting things one easily feels that this is not the whole story. Surely, there are also differences between the ways people treat each other and how they treat devices and media products e.g. because the latter ones are not living creatures. The relationships might resemble each other a lot, but probably still be different in many aspects. So the message the authors are presenting is to be considered among many other things that we know about people interacting with products.

Also, the book seems forget the difference of cultures, people and situations of life. The studies have been conducted in the USA with unknown “average” test subjects. However, the results seem to have thought to apply universally. The all-american stereotype of “couch potatoes” in front of tv hardly is applicable to the people in the whole world.

Aside from these critics, many of the findings in this book have their theory basis in cognitive and social sciences, although the target of the studies (computers and media vs humans) is

uncommon. The ideas for design that the authors present are quite simple and do not cause complexity to the design process or require latest technology. In fact, the authors claim that the technology doesn't have to be state of the art to produce these effects that are shown in the book. Thus the book leaves a bit light-grounded albeit quite interesting taste.

## **What are the implications to the design exercise "räyhääminen"?**

- 1) The "social etiquette of räyhääminen" should be explored and taken into account since people get hurt and are easily alienated if the hidden social rules are not obeyed.
- 2) Product should have distinct and consistent personality; however, it should adapt to the user's personality and behave accordingly.
- 3) Though designing personality to a product is often useful and more appealing, very detailed care should be taken while designing, since even small differences in nuances can change the whole perception of the product. Quite a few of the things that should be scrutinized in detail are discussed in this book.
- 4) The level of emotional involvement with the product can be adjusted with increasing or decreasing the product's perceived spatial closeness to the user.
- 5) The valence (positive/ negative) and arousal level of räyhääminen in the product should match the user's current need (for positive/ negative räyhääminen; for excitement or calm).
- 6) The product should not confuse the user with too many personalities.
- 7) When the product tries to influence the user's feelings it should preferably be female by gender.
- 8) The form should be designed with bearing in mind the user's cognitive and emotional capabilities. Too simple is dull, though.

### *Politeness*

People are polite to computers. They think that computers are like humans and unconsciously treat them that way. In brawling people may not want to do anything to a product that would 'hurt' it, just like they don't hit a person who's not able to defend him/herself even if they would like to. If people would know that the product would not 'get hurt' (or broke) e.g. because of the material it's made of they may express their feelings also physically more freely.

It's very hard to stay mad at a person who's friendly and polite. It might be that way with products as well. If the product persistently stays calm and polite no matter how much the user brawls it might help him/her to calm down.

### *Interpersonal distance*

The device could accompany the rhythm of brawling with changing the feeling of interpersonal distance. E.g. in the most heated phase of brawling a communications device could make the person in the other end seem to be closer by making his/her voice louder or picture closer. In the calming down phase the voice would be quieter again.

### *Flattery/ criticism*

If the product praises the user's ability to brawl, the user will be more satisfied to the device and like it more and perhaps use it more often when brawling. Of course, if the objective is to make the user even angrier the device could criticize his/her abilities and praise its own abilities. If the device is praising or criticising pointlessly without any ground it also creates more brawling.

### *Personality*

The product should understand the way user likes to brawl and imitate it. If that is not possible the product should show consistency in its own brawling. If the product is the receiving party that's triggering the brawling it should represent the opposite personality than what the user is, since different personalities are liked less than the similar ones.

### *Good versus bad*

Usually the brawling-feelings are negative and in order to calm down a brawler, those feelings need to be transferred to positive ones. If the product is designed to calm brawling, then the experiences that the user is getting by using the product should be such that they on most people stimulate the left side of the brain i.e. they should be extremely positive.

### *Negativity*

The product could offer negative experiences that would make the brawling better remembered and arouse brawler's attention. But even if negativity is remembered better and it arouses user's attention, the product can't be such that people don't like it, as it usually is with negative things.

### *Arousal*

Arousing experiences are remembered better so the product should provide more arousing feelings, positive or negative, depending on device's purpose.

### *Specialists*

The product should be specified as an expert in brawling so that people would find it more interesting and consider it more important at the brawling situations.

### *Teammates*

The product should somehow adapt to be a teammate with the brawler and try to create dependence between itself and the brawler so that they would cooperate better with each other. The product should also create an identity similar to the brawler.

### *Gender*

The voice coming out from the product could be a male voice when the brawling situation is related to some technical matter and a female voice when the brawling situation is related to human relationships. Then the product would be considered more reliable and credible.