

## ***Neuromarketing: Ethical and Political Challenges***

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### **ABSTRACT**

Ethicists and ordinary people are typically more worried by interventions that alter agents' mind by directly altering their brains than interventions that are focused on the environment, and thereby indirectly change minds. I argue that the causal route to changing minds is not itself important. Moreover, some of the most powerful techniques whereby behavior is altered without the consent or knowledge of agents involve environmental manipulations: manipulations of social space, for the benefit of those in the business of increasing consumption. I argue that insofar as we are fixated on internal interventions, we overlook ways in which our autonomy as agents is impaired. Once we recognize the power of environmental manipulations, however, we should come to see social space as a legitimate target for political control.

### ***0. Introduction***

When philosophers and ordinary people worry about how agents can be manipulated, they usually focus on internal goings-on. They focus on internal goings-on in two ways: they worry more about manipulations which affect the brains of agents than those that affect their environment, and they look for ways to (a) prevent such internal manipulations and (b) strengthen the internal resources of agents. There is good reason, sometimes, to worry about internal manipulations and there are often good reasons to help agents build internal resources. But the most effective and practicable manipulations of behavior, including buying behavior, are most likely to be external manipulations; and the most effective ways of strengthening self-control are likely to involve structuring the environment to facilitate it. In this short paper, I shall argue that focusing on internal goings on carries risks: risks of allowing marketers free reign to manipulate just where they are most likely to be effective, and of distracting attention from ways of resisting marketing pressures that are low-tech but effective.

### ***1. Internal and External Manipulations of Behavior***

Let me begin by very briefly recounting two recent experiments focusing on mind and behavior. The first experiment examined the effects of the hormone oxytocin on people's behavior. It was found that administering the hormone (via a nasal

spray) increased people's trusting behavior, as measured by their willingness to cooperate in a bargaining game in which cooperation carries the risk of loss (Kosfield et al. 2005). The second study was an imaging experiment, comparing the brains of subjects drinking Coke and Pepsi, with and without the knowledge of which brands they were drinking. When subjects were ignorant of the brands, only the ventromedial prefrontal cortex was active. But when the brands were identified, subjects exhibited additional – dorsolateral prefrontal and hippocampal – responses to Coke alone (McClure et al. 2004).

Now, it is not so much the content of these experiments that interest me here as the *responses* to them. In their book *Affluenza*, Clive Hamilton and Richard Denniss label the Coke experiment 'disturbing' (Hamilton & Denniss 2005: 41-2). It shows, they conclude, that 'We have not so much been brainwashed into drinking Coca-Cola: we have had our brains rewired to want it' (42). Now Hamilton & Denniss are surely right in thinking that due largely to Coke's effective advertising and cultural saturation strategy, the company has been successful in getting people to make the association between the drink and a host of other things which are in fact unrelated to it. But the *fMRI results* do not tell us that. What does tell us that? Well, largely people's behavior; their verbal behavior as well as their buying behavior. What the fMRI results tell us that is that people have memories and visual percepts associated with Coke. Surely, though, we didn't need neuroscience to tell us that (suppose that people failed to experience hippocampal activation in the experiment. What would we conclude? Well, probably that the equipment was faulty). Now, I am not saying that we can't learn new and surprising things from neuroscience. I am saying that we should not be impressed with images of brains *just because* they are images of brains. The internal is not privileged. If anything, it is the other way round: we look to behavior to validate neuroscience, not the other way round.

Worries expressed over the oxytocin experiment are better founded. Some people have expressed the worry that oxytocin might be used to bolster trust in speakers at political rallies (Damasio 2005). It's easy to see how this worry might be extended to a sales context. Trust will greatly facilitate the job of a salesperson. But notice that salespeople already engage in activities designed to facilitate trust. Indeed, it is likely that they engage in actions which have the effect of facilitating trust *by way of* increasing oxytocin (though of course they don't think of what they do in this way). Here's an example from a sales handbook: tell the customer that the product they're looking at is somehow defective or unsuitable for them. Since they think that if you're trying to sell to them no matter what, you will tell them that the product is good, their trust in you should rise. Now lead them to the product you wanted them to buy all along. Here's another technique, which suggests itself once we know that oxytocin facilitates trust: stimulate it. For instance, have kittens around, or pictures of kittens.

My claim is that these entirely environmental manipulation should be just as disturbing to us as internal. Yet people continue to believe that neuroscience has a special and especially intimate ability to peer into the soul, or at least its closest secular equivalent. Consider, in this context, another experiment. Weisberg and colleagues gave subjects, both scientists and laypeople, explanations of events and facts that were deliberately designed to be obviously flawed. They found that both groups of subjects could identify faulty explanations. Yet when the subjects were given the same explanations peppered with neuroscientific jargon, their critical abilities left them, and they took bad explanations for good. We think brain science is especially good science, and are credulous toward it. Perhaps this is because the science is new; I think, though, that part of the explanation is that brain science is an internal science. Because it looks at what is going on inside, it is taken to have far greater depth than mere psychology. Once again, I am not saying that brain science is *not* good science. I think it is still in its infancy, but its results are already very exciting. I only want to say that we ought not be dazzled by it, or overlook the other ways we learn about, and control, human behavior.

## 2. *The Challenge of Neuromarketing*

Now, what has this got to do with marketing? Recently, there has been a great deal of talk, and worry about, neuromarketing. Neuromarketing would apply the methods of neuroscience to moving products. For instance, rather than ask focus groups what they think of a product, we could place them in fMRI machines and measure their neural responses to products. Why do that? Well, perhaps subjects are not always honest: they may tell people what they think they want to hear, rather than what they really believe. Or perhaps even subjects who are trying to be honest are unable to be sure what they think of a product. They may be deaf to the signals that intimate that their infatuation with a new drink is likely to be short-lived (or whatever the case may be). By peering directly into brains, the hope of some (and the fear of others) is that we could cut through this messiness. We could focus directly on signals of pleasure in subjects, for instance, avoiding worries about insincerity. We could know more about subjects than they know about themselves. In that way, we could very finely attune products and marketing campaigns to target audiences and their desires, thus making products well nigh irresistible.

I do not think we can rule out the possibility that these methods could prove useful to marketers. But I think there is very good reason to be skeptical, for the moment and for the foreseeable future. First, consider dishonesty. I see no reason to deny that subjects might not exhibit neural signals of, say, pleasure, which they can attempt verbally to dissimulate. fMRIs might be a way of detecting such signals. It's a pretty expensive way, though, and others that are cheaper are

available. We can observe subjects behavior covertly; we can measure physical responses (psychophysiology is probably a more reliable guide of arousal than fMRI). In any case, we can rest assured that most subjects attempt to be honest most of the time. Similar points apply to ambivalence. For the moment, at least, verbal response and overt behavior is a much better indicator of how subjects are feeling than are brain scans.

Moreover, it is far from certain that fMRI will always detect dissimulation. Independent testing of neuroscientific technologies specifically designed for lie detection has not been very promising (Miyake, Mizutani & Yamamura, 1993); it would be surprising if techniques developed for other purposes were more successful. Moreover, when subjects are motivated to ‘beat’ neural lie detection technology they appear able to succeed (Rosenfeld et al. 2004); successful countermeasures are surprising simple and easy to implement. Investing in neuroscience to detect dissimulation is likely to be ineffective; in any case, it is unlikely to be necessary.

For the most, I suspect, neuromarketing will prove an expensive waste of time. It is also, and much worse, risky – not in itself, but insofar as it diverts attention from external ways of manipulating behavior that are more effective, and therefore far more in need of regulation. These ways of manipulating behavior build on the techniques that marketers have been using for many decades now, of controlling consumption by controlling space. They work, they are scientifically validated, and they are likely to be refined in the future. We don’t worry about them because they focus on the environment around us, rather than on our brains. But we ought to be more concerned about them than the internal manipulations which might, one day, prove practicable.

First, let me mention some of the techniques that marketers use today to encourage consumption (that is, to encourage people to buy more than they need, as well as to shift their buying preferences). It has long been known that how goods are positioned affects consumer behavior. Putting the most popular goods in the middle of aisles maximizes exposure to the products – if they are placed at the ends, people may grab them and head to the checkouts without passing the products they did not intend to buy. Similarly, essential items are often placed at the back of the shop to increase traffic past non-essential goods. Products may be ordered in terms of price, with more expensive goods placed where they will be encountered earlier. The result is that cheaper goods are perceived as good buys, in comparison with more expensive goods. More counterintuitively, pricing in multiple lots can encourage greater buying, and once the buying pattern is established, it tends to be maintained (Wansink et al. 1998).

Now, marketers might tell you that all these techniques are merely designed to expand consumer choice. By making consumers walk past goods, they are made aware of their existence. Special offers give people choices to buy in multiple lots, thus expanding their options. It should be admitted that these responses have some degree of plausibility. Certainly, these techniques don’t *look* particularly

threatening. Unlike internal manipulations, they leave the agent, with her powers of resistance and choice, unaffected. I believe that this distinction between the agent and her environment both philosophically suspect and practically dangerous. Let me now tell you about some techniques currently being explored to encourage consumption behavior which work on agential powers *from the outside*. These techniques build on a well-established paradigm in social psychology called the ego-depletion hypothesis.

The ego depletion hypothesis is, roughly, this: willpower is a limited resource, which we draw upon to resist temptation. That is, when we judge that we ought to act in some way, but are tempted to act in a way that conflicts with our judgment, we draw upon our willpower to overcome temptation. All too commonly, of course, we fail to act as we judge we ought in these kind of circumstances: we continue to smoke when we judge that we ought to give up, we eat or drink more than we believe we ought to, we spend more than we think we should. But sometimes, in what seems to be exactly the same circumstances, we manage to bring our actions into line with our judgments. Moreover, some people seem to be better at this than others. What explains our success at getting ourselves to do what we judge we ought, when we succeed? And what explains why some people are better at this than others? We often answer this question with just the word ‘willpower’. Proponents of the ego depletion hypothesis say that we are exactly right.

Willpower, they argue, is resource-like inasmuch as we use it, we use it up (that is what the word ‘depletion’ means in ego-depletion). Of course, we don’t use it up permanently, just until we get an opportunity to replenish it. What replenishes it is rest. This is sometimes referred to as the muscle model of self-control. How much we can lift at any one time depends upon the state of our muscles. Muscular strength is used up in the short term: if I have just done 20 push-ups, I find it very difficult to do more. But this strength returns with rest. Moreover, muscular strength increases with us; similarly, proponents of ego depletion suggest that willpower can increase with regular exercise (Baumeister et al. 1998; Baumeister 2002).

Let me briefly sketch the evidence for the ego-depletion hypothesis. It comes from a large set of studies. In these studies, subjects are divided into two groups. One group is assigned a self-control task, which involves resisting a desire; the control group is instead given a tiring task which does not require self-control to anything like the same extent. For instance, in a typical study the first group was ushered into a room filled with the smell of freshly-baked cookies, which were laid out on plates in full view. The subjects were told that they were to participate in a study on taste perception; one group of subjects would eat the cookies and another would eat radishes. They, they were told, were the radish group. They were then presented with plates of radishes, and left with instructions to eat several of them. The experimenters withdrew and covertly observed the subjects. They were observed to sniff and even handle the cookies, but despite the fact that they thought

they were unobserved, all of them dutifully ate radishes and not the cookies. Meanwhile, the control group performed a task that did not require self-control, but which was tiring – a typical task was performing a series of three digit multiplications on paper.

Subjects from both groups were then tested on a common task, which does require self-control. Typical tests include squeezing a handgrip for as long as possible, persisting at an unsolvable anagram task, or keeping one's hand immersed in icy water. Subjects who have previously performed a self-control task – resisting the cookies, or watching a funny video while keeping a completely straight face – perform worse at the common task than do subjects in the control group, inasmuch as they persist at the task for a significantly shorter time. Moreover, their lack of self-control carries over to more naturalistic settings. For instance, dieters who are ego-depleted eat more after the tests than do non-dieters (Vohs & Heatherton 2000).

What apparently happens is that the subjects in the ego-depletion group – those that had a self-control task prior to the common task – have less willpower to draw on than subjects who have been given a different, yet tiring, task. How ego-depletion works, precisely, is still rather mysterious; in recent work I have argued that the resource depleted is not in fact a discrete self-control resource, but a domain-general capacity: one that is involved in all effortful tasks, including deliberation (Levy forthcoming(a)). Willpower is only one capacity that degrades when it is called upon. What matters for our purposes, however, is that willpower is subject to depletion: self-control tasks get progressively more difficult until the agent gives in to temptation (succumbing, I have suggested, is mediated by judgment-shift: once self-control resources are sufficiently depleted, the agents change their mind concerning how they ought to behave).

Ego-depletion appears to have no phenomenology at all, at least in the short-term (there are studies reporting greater fatigue after the second task, but that is *after* the effects of ego-depletion have already manifested; that is, after the damage has been done). So there are no warning signs that signal to us that our willpower is low. That makes ego-depletion a phenomenon ripe for exploitation by those who would encourage us to consume more. If you want to make someone buy a product that they desire, but which they prefer, all things considered, not to purchase, you ought to ensure that their self-control resources are depleted when they confront the option of purchasing it. This can be done by requiring potential purchasers to engage in self-control tasks, which deplete their resources, before they are presented with the option of purchasing. This seems to be relatively easy to ensure: simply expose them to many tempting opportunities to consume. We can expect them to find it progressively more difficult to resist repeated temptations. Now, it may be that marketers are already doing just this, though they don't – quite – conceptualise what they're doing in these terms. Think of a shopping mall. Already these are intentionally designed to maximize consumer's expo-

sure to temptations (escalators are positioned so that rather than just riding from one floor to the next, we are required to continually walk around, thus ensuring we pass shops on the way; similarly popular shops may be located so that we are forced to pass speciality shops on the way). Once the ego depletion hypothesis is deployed by marketers, we can expect a more precisely targeted use of the strategy. One possibility is to ensure that consumers are exposed to low value but tempting items – eg. chocolate bars – early, to ensure that when they are exposed to high-value items later, their self-control resources are at a low-ebb. Sellers of large consumer items might find it profitable to get into retailing confectionary as a side-line; credit card companies might find arrangements with such retailers profitable as well.

To my knowledge, no one has tested the hypothesis that repeated shopping opportunities are ego-depleting, all by themselves. However psychologists have tested whether ego-depletion affects the propensity to consume, as well as whether it affects subjects' evaluation of consumer items (Vohs and Faber 2002). Ego-depleted subjects are more willing to buy, and will pay higher prices, at least in the laboratory. Marketers seeking ways to control our behavior are far more likely to use this kind of technique than to resort to the use of more invasive techniques. They can structure the environment to produce the behavior they want, and they can do so more effectively in this manner than they can using the tools of neuroscience. Most people are not as worried about this kind of manipulation as they are about neuroscientific technologies. But the differences are not important. Both manipulate behavior, and they do so for purposes that are not those of the people who are manipulated. Both can result in changes in beliefs, and in the actions which express those beliefs. The way in which these alterations come about doesn't seem to matter, from a moral, or a political, point of view. If there are good reasons to be concerned about the first, there are equally good reasons to care about the second as well.

These considerations lend support to a conclusion that I have defended elsewhere (Levy 2007; forthcoming (b)): the causal route by which behavior is modified – whether it is largely internal or external to the skull – is irrelevant to its ethical significance. The difference in degree of concern we see with regard to neuroscientific results, which leads to anxiety over experiments like the Coca Cola study mentioned earlier, but scant concern over 'merely' environmental manipulations, is unjustified. There is no reason to think that because we can point to internal goings on that autonomy is more threatened than by external goings-on. Once we know how such goings-on can help to manipulate people, we should expect to see them deployed. In response, we should demand control of our environments, a control informed by the best science. One payoff might be our coming to see many current advertising practices as a kind of mental pollution, just as threatening to our autonomy as the kind of subliminal advertising widely feared, and just as ripe for political control.

*References*

- Baumeister, R.F., Bratslavsky, E., Muraven, M. & Tice, D.M. 1998. Ego-depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology* 74: 1252-1265.
- Baumeister, R.F. 2002. Ego Depletion and Self-Control Failure: An Energy Model of the Self's Executive Function. *Self and Identity* 1: 129-136.
- Damasio, A. 2005. Human behaviour: Brain trust. *Nature* 435: 571-572.
- Hamilton, C. & Denniss, R. 2005. *Affluenza : when too much is never enough*. Crows Nest, NSW: Allen & Unwin.
- Kosfeld, M., Heinrichs, M., Zak, P.J., Fischbacher, U. & Fehr, E. 2005. Oxytocin increases trust in humans. *Nature* 435: 673-676.
- Levy, N. Forthcoming(a). Resisting Weakness of the Will. *Philosophy and Phenomenological Research*.
- Levy, N. Forthcoming(b). Neuroethics and the Extended Mind. In J. Illes and B. Sahakian (eds) *The Oxford Handbook of Neuroethics*. Oxford University Press.
2007. *Neuroethics: Challenges for the 21<sup>st</sup> Century*. Cambridge: Cambridge University Press.
- McClure, S.M. Li, J., Tomlin, D., Cypert, K.S., Montague, L.M. & Montague. P.R. 2004. Neural Correlates of Behavioral Preference for Culturally Familiar Drinks. *Neuron* 44: 379-387.
- Miyake, Y., Mizutani, M., & Yamamura, T. (1993). Event-related potentials as an indicator of detecting information in field polygraph examinations. *Polygraph* 22: 131-149.
- Rosenfeld, J.P. Soskins, M., Bosh, G., & Ryan, A. 2004. Simple effective countermeasures to P300-based tests of detection of concealed information. *Psychophysiology* 4: 205-219.
- Vohs, K. D., & Heatherton, T. F. 2000. Self-regulatory failure: A resource-depletion approach. *Psychological Science* 11: 243–254.
- Vohs, K.D., & Faber, R. (2002). Self-regulation and impulsive spending patterns. In *Advances in Consumer Research*, Vol. 30, eds. Punam Anand Keller and Dennis W. Rook, Provo, UT: Association for Consumer Research.
- Wansink, B., Kent, R.J. & Hoch, S.J. 1998. An Anchoring and Adjustment Model of Purchase Quantity Decisions. *Journal of Marketing Research* 35: 71-81.
- Weisberg, D. S., Keil, F. C., Goodstein, J., Rawson, E., & Gray, J. (in press). The seductive allure of neuroscience explanations. *Journal of Cognitive Neuroscience*