

# Brain Imaging and Privacy

## 1. Introduction

One important question in neuroethics concerns the issue of “brain privacy”, also labelled as “cognitive privacy”, “thought privacy”, “mental privacy” and “cognitive liberty”.<sup>1</sup> Two claims have been especially common in the debate on brain privacy. I think they both are more or less justified.

The first claim is that, at least in the future, brain imaging and other applications of neurosciences may violate people’s right to privacy, in particular, their right to conceal parts of their inner life. For instance, someone may either coerce or unduly influence a patient or an employee to undergo a neuroscience intervention.<sup>2</sup> Of course, to say that brain imaging may violate people’s right to privacy is not to say that it would be an easy task to say which actions *are* violations of right to privacy – rather than morally justified *compromises of privacy*. If lie detection by the means of functional MRI (Magnetic Resonance Imaging) technologies in certain litigation contexts is allowed, should we talk about morally justified compromises of privacy, at least in some cases? Suppose remote screening of airline passengers for violent or suicidal thoughts will be possible and allowed in the future and that the passengers will be well informed about this practice. Would it be merely a morally justified compromise of passengers’ privacy and comparable to current security checks?

The second claim is that brain scans and testing will reveal information that people would prefer to keep private and that this capacity invites misuse of private information.<sup>3</sup> For instance, insurers and employers may use personal information from brain scans to unfairly discriminate against people seeking employment or medical insurance.<sup>4</sup> Evidently, discrimination that uses private information

is not always related to violations of right to privacy. Suppose that a person reveals to his landlord that he is homosexual, and because of that, the landlord decides to cancel his rental agreement. In this case a person's intentional self-disclosure of personal matters leads to unjustified discrimination, but it does not lead to a violation of a right to privacy nor is it based on a violation of a right to privacy (unless we make a suspect claim that a person may violate his own right to privacy by making intentional self-disclosures of personal matters).<sup>5</sup>

The topic of the present paper is neither violations of right to privacy nor misuse of private information. Both of these topics raise interesting questions, but perhaps it is useful to keep in mind that, in principle, violations of right to privacy and discrimination are avoidable by appropriate regulations, professional codes, training, public discussion, laws, effective control, and so on. Needless to say, these means are extremely difficult to implement in practice, but yet avoiding violations of privacy rights and preventing social discrimination are technical and especially political matters. There is nothing in the applications of neurosciences that *necessarily* leads to violations of right to privacy or misuse of personal information. These moral crimes are preventable – at least in principle.

In what follows, I will briefly analyze cases that compromise people's brain privacy in a considerable manner but do not seem to involve moral crimes. I aim to show the falseness of the fairly common assumption that brain imaging may compromise people's privacy in an undesirable way only if moral crimes are committed.

## 2. Failures of Privacy

Many authors have argued that new brain imaging technologies will provide all kinds of information about persons' inner life, not only information that is intentionally searched for.<sup>6</sup> At least in the future, functional MRI lie detection and diagnostic neuroimaging, for instance, may reveal something that was not searched for by anyone. Access to online databases involving private information about persons' mental life may have similar effects. Suppose now that a well-informed patient (or employee etc.) freely consents to accept all the necessary imaging processes even if they may reveal something else that is under consideration. Suppose further that they do reveal something else: beliefs or memories, emotions or intentions, personality traits or mental disorders, something that he would have preferred to keep private.<sup>7</sup>

These kinds of cases are or at least strongly resemble so called *failures of privacy*, a term used by J. David Velleman.<sup>8</sup> Failures of privacy are typically unintentional. A careless person may accidentally drop his bag that opens in the crowded shop so that people see his pills and other personal things. A man of God may forget *Playboy* magazine on the table when his visitors come to the room. A worker may talk to his colleague and unwittingly reveal all sorts of things about him, including certain emotions that he would have preferred to keep private or share with a friend. However, failures of privacy need not be unintentional. Consider indiscreet self-disclosures while drunk.<sup>9</sup> They are intentional, but it is appropriate to call them failures, especially if the person strongly regrets his confessions afterwards (i.e. next morning). Suppose that a philosopher receives a letter from an Editor who tells that his manuscript cannot be published. He gets very angry and sends a couple of e-mails in which he reveals, in detail, what he really thinks about the Editor, the members of the editorial board, their colleagues and so on. Surely this is an intentional failure of privacy, at least if he soon regrets that he openly revealed his private thoughts. In intentional

failures of privacy people's intention is not to fail, but the failures are based on intentional action, rather than unintentional action such as forgetting things. When a person's privacy is compromised because of a failure, he can typically be held personally accountable for the failure. He may have certain grounds to blame other people or bad luck for what happened, but he should confess that he is clearly responsible.

The case of the patient who freely consents to accept all the necessary imaging processes even if they may reveal something else that is under consideration and whose privacy is, as a result, compromised, resembles the case of the worker who talks to his colleague and unwittingly reveals his emotions that he would have preferred to keep private. A difference between the cases is that the patient is well aware of the risk that his privacy may be compromised in an undesirable way while the worker does not seem to notice the risk or does not pay sufficient attention to it (for instance, because he does not know his colleague well enough). But both cases are instances of unintentional failure of privacy.

Failures of privacy bring to mind failures of impression management or *self-presentation*.<sup>10</sup> The notion of self-presentation is used in various ways in the literature. Here I refer merely to the fact that people maintain different relationships with different people, and they feel that information appropriate in the context of one relationship may not be appropriate in another. Here is an example. A father may be playful with his children, businesslike with his employees, and respectful and polite with his mother-in-law. His conception of how it is appropriate for a businessman to behave is perfectly compatible with his also being a father and a son-in-law, with different conceptions of how it is appropriate to behave with his children and his mother-in-law.<sup>11</sup> A person has failed in his self-presentation when he has behaved against the standards concerning appropriate behaviour, given the context or the audience. People's self-presentation often fails because

“audience segregation” breaks down.<sup>12</sup> A man may think that he has behaved in an inappropriate manner when he notices that his mother-in-law has been in the same place when he has drunk beer with his friends and used relaxed language. Failures of self-presentation often involve a sort of leak of information, but usually the “surprising” information is, at least on a general level, familiar to all sides. The mother-in-law cannot be terribly surprised if she notices that her son-in-law drinks beer with his friends and talks in a relaxed way, although she marks a clear difference in the man’s manners. The concept of self-presentation is usually connected to Erving Goffman (1922-1982) and his book on *The Presentation of Self in Everyday Life* (1959), but certainly the idea is much older. William James (1842-1910), for instance, famously wrote that “a man has as many social selves as there are individuals who recognize him”.<sup>13</sup>

Failures of privacy may also bring to mind certain failures of etiquette or *conventions of surface*. As children we learn to express what we feel, but we also learn to keep many thoughts and feelings to ourselves. For instance, in most contexts it is polite not to express feelings of anger or contempt. These kinds of things are kept out for reasons of courtesy, and conventions of surface make social life possible. In daily discussions we say all kinds of things that are not exactly true. As Georg Simmel (1858-1918) argued, whatever we say “is never an immediate and faithful presentation of what really occurs in us”.<sup>14</sup> If a professor says in a cocktail party to his ex-wife’s new husband “how nice to see you again”, he is talking as he should – whatever his feelings are. A failure occurs when a person reveals his true feelings so explicitly that others have to work hard in order to avoid an open conflict. These kinds of failures of etiquette may involve a leak of information, but often they do not reveal anything surprising. Conventions of surface may help us to hide aspects of our inner life, but this is not their main function. Conventions of surface merely help us to keep potentially disruptive material *out of the scene*. To quote Thomas Nagel, it is “material that everyone who has been around knows is there – feelings of hostility, contempt, derision, envy,

vanity, boredom, fear, sexual desire or aversion, plus a great deal of simple self-absorption".<sup>15</sup>

When the professor says to his ex-wife's new husband "how nice to see you again", it would be unfair to blame him for lying, even if it looks and is obvious that he is not happy at all that the new husband arrived. The professor only complies with the conventions that should be familiar for everyone. Keeping certain thoughts and emotions out of the official scene is typically enough to avoid an open conflict. We need not struggle further in order to make our thoughts and emotions completely unknown to others.

A normal emotional reaction to failures of privacy is (embarrassment or) shame, given that the agents realize that failure occurred.<sup>16</sup> It is possible to come up with examples in which failures of privacy do not lead to shame, but surely feelings of shame are the common result of failures of privacy. Typically (if not always) we feel shame just because we failed, not because we revealed something "shameful" in the sense of it being wrong or bad. For instance, the philosopher who has sent e-mails that have revealed his true thoughts feels shame most probably because he was unable to control his impulses, not because he suddenly thinks that his views are somehow "shameful". Like many other emotional states, shame is a complex emotion, and there is a lot of confusing and confused literature about shame.<sup>17</sup> But for the present purposes we need to keep in mind only certain relatively uncontroversial features about it. First, it is unpleasant to feel shame. Anxiety is part of the emotion of shame. Second, shame may last long. Shame does not disappear when the occasion that causes shame is over. Third, a person may feel shame very strongly and very long, even if there were only a few persons, even only one person, who witnessed his conduct, i.e. the failure. The number of witnesses is hardly relevant. A relevant thing, for one, is the supposed trustworthiness and "importance" of the witnesses. It would be better for a person to be disclosed to five persons whom he considers trustworthy or to five persons whom he considers "unimportant"

than to one person whom he considers important but untrustworthy. The question is about the price of the disclosure.

A normal emotional reaction to violations of right to privacy differs clearly from the normal emotional reaction to failures of privacy. A person whose right has been violated may be disappointed and sad and he can even feel some shame, but in the first place he is angry and feels justified *moral resentment*. Failures of privacy do not create moral resentment – at least they should not.<sup>18</sup> For instance, a person who has made indiscreet self-disclosures while drunk may be angry at himself, but most probably he feels shame too.

### **3. Brain Privacy and Shame**

Consider again the worker who unwittingly reveals his secret emotions to his colleague. The unintended disclosure may make him feel shame, but actually it need not happen. For the colleague may politely put aside what the worker's communication as a whole tells him and it may happen that the worker won't notice that the failure of privacy occurred. In daily face-to-face situations people usually communicate by using the tone of voice, facial expressions, and body movement, not only words. As Plotinus wrote in his Fourth Ennead, "eyes often know what is not spoken".<sup>19</sup> However, the tacit communicative means are not completely in our control, and it happens every now and then that their message conflicts with our official view.<sup>20</sup> It is typically (although not always) polite to concentrate on the person's official view over which he exercises sufficient choice and control, and put aside messages that merely come across. If the colleague notices that now the worker has revealed something that he did not want to tell (because the information conflicts with the worker's official view and because it is not customary to reveal such things), then the colleague may just let things go unnoticed and try to save the worker from the feelings of shame.

Let us compare again the worker's case and the case of the well-informed patient who freely consents to accept all the necessary imaging processes even if they may reveal something else that is under consideration and whose privacy is, as a result, compromised. Is it possible in his case that someone saves him from the feelings of shame? When all the results of the brain scan are on the table, is there someone to "put aside" part of the results? I am not optimistic. It would be inconvenient and perhaps even ethically questionable to conceal part of the information from the patient – whether or not the information in question was intentionally searched for. Of course, the patient could make a deal that he will be told nothing but the information that was intentionally searched for. But this would leave him in a situation where he would not know what the others know about his private matters such as beliefs or memories, emotions or intentions, personality traits or mental disorders. That would be a *very* stressful position, and most people would hesitate to make such deals. Thus the worker's case is not analogous to the patient's case. The worker can easily be saved from the feelings of shame, perhaps, but the patient cannot.

Suppose now that Judy Illes and many others are right when they say that neuroimaging will provide all kinds of information about persons' inner lives, not only information that is intentionally searched for.<sup>21</sup> Suppose further that Martha J. Farah and others are right when they argue that there will be more and more application fields of fMRI and more and more people whose brains will be scanned (without any coercion) in the context of health care, research, employment, insurance, criminal justice, litigation and so on.<sup>22</sup> It seems to follow that in the future the amount of failures of privacy will dramatically increase. And since failures of privacy lead to feelings of shame (especially when neuroimaging is concerned), it also seems to follow that the number of people who feel shame will dramatically increase. If this is true, our future does not look particularly delightful



in this respect, for shame is an unpleasant emotion that may last long even if there was only one person who witnessed the failure.

A person cannot save himself from feelings of shame by living a “good life”. Failures of privacy that will occur in the context of neuroimaging are followed by feelings of shame whether or not there is anything particularly “shameful” in a person’s beliefs, intentions or emotions, for instance. We have many good reasons to desire privacy, and most of us do *not* value privacy because it may help to hide morally suspect (i.e. shameful) thoughts or emotions and can be used for fraudulent purposes.<sup>23</sup> To a large extent, our desire for privacy is a matter of principle. We have things that are *nobody else’s business*, and our inner lives certainly belong to this category. Besides this we value privacy for many reasons. Let me mention only two obvious reasons. First, if others manage to obtain too much information about us, they will have power over us, and it can be used against us. Second, we know that people tend to be intolerant of life styles and ways of thinking that differ significantly from their own, and we do not want to take a risk that we will be the objects of public condemnation or ridicule, no matter how wholeheartedly we think that we are right.<sup>24</sup>

#### **4. On Another Planet**

When neuroimaging accidentally reveals a person’s beliefs or memories, emotions or intentions, personality traits or mental disorders, the person’s privacy is compromised. Suppose, however, that the person would *not* have preferred to keep them private. Suppose that it is perfectly fine for him that now other people may know, for instance, his deepest thoughts and feelings and that he simply does not care what others know. In this case there simply cannot be failures of privacy (related to revelation of inner life) and thus no failure-originated feelings of shame. This raises an interesting question whether it would be desirable to live in a society whose members would not value privacy

at all. It is useful to keep in mind that social rules of privacy are strongly culturally relative. In some cultures it is thought to be perfectly acceptable to walk inside another person's house without a specific permission, while in others, such behaviour would normally be socially condemned. In certain "exotic" cultures relatives have free entry to one another's sleeping quarters.<sup>25</sup> Thus the idea that there could be a society whose members do not value privacy is not *completely* fantastic. Should we somehow try to proceed into direction where privacy is not important anymore, as suggested by some authors?<sup>26</sup>

Probably not. Remember that social life goes smoothly just because everything is not out in the open. It is true that slightly greater frankness than we are used to need not cause social breakdown, but many of our thoughts and emotions, for instance, must be kept to ourselves.<sup>27</sup> Immanuel Kant (1724-1804) made this point beautifully in his book *Anthropologie in pragmatischer Hinsicht*, published in 1796-7. Kant argues that people could not "get along with each other" if all their thoughts were made public. On another planet things could be different if its citizens were "all as pure as angels". Kant writes:

It could well be that on another planet there might be rational beings who could not think in any other way but aloud. These beings would not be able to have thoughts without voicing them at the same time, whether they be awake or asleep, whether in the company of others or alone. In what kind of different behavior toward others would this result, and what kind of effect would it have in comparison with our human species? Unless they are as pure as angels, we cannot conceive how they would be able to live at peace with each other, how anyone could have any respect for anyone else, and how they could get along with each other.<sup>28</sup>

Of course, indifference about privacy *need not* mean that everything is out in the open. For people may have very strict conventions of surface that would deny them to talk about their own thoughts too much, not because that would secure their privacy, but because that would save other people from facing the most disruptive and irritating thoughts. Arguably, however, we are more willing and competent to keep harmful material out of the scene if we are also interested in our own privacy and not only in the harmony of social life and other people's peace of mind. But let us leave the question of the desirability of the world without privacy unsettled here. This particular utopia does not seem feasible in the near future anyway, even if the number of people who feel shame will clearly increase. If we wish to avoid shame, we should probably do something else than strive for this utopia – or dystopia, however we wish.

## **5. Concluding Remarks**

I have argued that the fairly common assumption that brain imaging may compromise people's privacy in an undesirable way only if moral crimes are committed is false. Sometimes persons' privacy is compromised because of failures of privacy, and a normal emotional reaction to failures of privacy is shame, not moral resentment like in the cases of violations of right to privacy. I have also argued that if (1) neuroimaging will provide all kinds of information about persons' inner lives and not only information that is intentionally searched for, and (2) there will be more and more application fields of fMRI and an increasing number of people whose brains will be scanned (without any coercion), then, in the future, shame may be an unfortunately common feeling in our culture. This is because failures of privacy may dramatically increase. It is useful to keep in mind that a person may feel shame strongly and long, especially if his failure is witnessed by people who he considers relatively important, but less than perfectly trustworthy.

The practical lesson of the present argument is limited. That is, I do not think that the findings above determine how exactly we should proceed, although we can worry about political decisions that will increase the probability of failures of privacy. Our possible future with unpleasant feelings of shame is certainly *one relevant thing* that we should take into account when we consider the desirability and moral acceptability of the applications of brain sciences, but there are many other relevant issues as well.<sup>29</sup> Perhaps we can do something – such as inform people that neuroimaging may reveal embarrassing information that is not intentionally searched for. There may be some other practical things to do as well. Legislation that sets limits for the use of brain scanning comes to mind.<sup>30</sup>

It is often argued that a threat against brain privacy is also a threat against cognitive liberty and freedom of thought. This is true in a sense that were our thoughts open to others, we would probably try to avoid having certain thoughts – on condition that we would know that others can read our minds. However, our trying to avoid certain thoughts would also be transparent to others if they could really read everything about our mental lives. Thus it would probably be futile to try anything. The notion of cognitive liberty may refer to various sorts of things. Some people support passionately the idea that people have a right to think and feel whatever and however they wish to think and feel. There is something appealing in this view, but it is good to notice that we evaluate morally other people's inner lives and character traits and are surely justified to do so.<sup>31</sup> A right to think and feel whatever and however one wishes cannot mean that people are not ethically accountable for their inner lives.

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## References

1. For a discussion, see e.g. Martha J. Faraf and Paul Root Wolpe, "Monitoring and Manipulating Brain Function", *Hastings Center Report* 34 (2004), 35-45, esp. 39; Donald Kennedy, "Neuroscience and Neuroethics", *Science* 306 (2004), 373; Stacey A. Tovino, "Currents in Contemporary Ethics: The Confidentiality and Privacy Implications of Functional Magnetic Resonance Imaging", *The Journal of Law, Medicine & Ethics* 33 (2005), 844-850; Judy Illes and Eric Racine, "Imaging or Imagining? Neuroethics Challenge Informed by Genetics", *The American Journal of Bioethics* 5 (2005), 5-18, esp. 11; Paul Root Wolpe et al, "Emerging Neurotechnologies for Lie-Detection: Promises and Perils", *The American Journal of Bioethics* 5 (2005), 39-49, esp. 46; Ruth L. Fischbach, "The Brain Doesn't Lie", *The American Journal of Bioethics* 5 (2005), 54-55; Neil Levy, *Neuroethics* (Cambridge university Press, Cambridge 2007), Ch. 4; Guy Kahane, "Brain Imaging and the Inner Life", *The Lancet* 371 (2008), 1572-1573; Joseph R. Simpson, "Functional MRI Lie Detection: Too Good to Be True?", *The Journal of the American Academy of Psychiatry and the Law* 36 (2008), 491-498, esp. 496.
2. See e.g. Henry T. Greely, "Prediction, Litigation, Privacy, and Property" in Brent Garland (Ed.), *Neuroscience and the Law* (The Dana Press, New York 2004).

3. See e.g. 2. Margaret L. Eaton and Judy Illes, “Commercializing Cognitive Neurotechnology – The Ethical Terrain”, *Nature Biotechnology* 25 (2007), 393-397, esp. 395.
4. See e.g. Walter Glannon, “Neuroethics”, *Bioethics* 20 (2006), 37-52, esp. 45. Different treatment of different cases may be morally justified.
5. Obviously, an intentional self-disclosure *may lead* to a violation of right to privacy. A medical doctor, for instance, may disseminate information about his patients, without permission or other justification. By doing so he is not only acting against his professional ethics and rules of confidentiality, but also violates patients’ right to privacy. It is contestable whether a person could ever violate his or her *own rights*.
6. Eaton & Illes 2007, 395.
7. Here I assume that informed consent is possible even if the agent does not know what will be revealed. At the moment, the use of neuroimaging to gather information about people’s psychological traits, for instance, is possible, but only to a very limited extent. See Martha J. Farah et al, “Brain Imaging and Brain Privacy: A Realistic Concern?”, *Journal of Cognitive Neuroscience* 21 (2008), 119-127.
8. J. David Velleman, “The Genesis of Shame”, *Philosophy and Public Affairs* 30 (2001), 27-52, esp. 38. My use of the term differs from that of Velleman. In his view, failures of privacy are always unintentional (if I have interpreted his argument correctly). In this paper I use mainly Velleman’s theory of the relation between privacy and shame.
9. Hyman Gross’ example. See his “Privacy and Autonomy” in J. Feinberg and H. Gross (Eds.), *Philosophy of Law* (Wadsworth, Belmont 1991).
10. See e.g. Mark R. Leary, *Self-Presentation: Impression Management and Interpersonal Behavior*. (Westview Press, Boulder 1996), 40. Privacy and self-presentation are often connected together. See e.g. Ferninand Schoeman, “Privacy and Intimate Information” in F. D. Schoeman (Ed.), *Philosophical Dimensions of Privacy: An Anthology* (Cambridge University Press,

Cambridge 1984), 403-418, esp. 408; Velleman 2001, 43. Self-presentation, i.e. composing an overt persona for social interaction purposes, need not involve anything dishonest such as intentional manipulation of others or insincere play for selfish purposes.

11. James Rachels' example. See his "Why Privacy Is Important", *Philosophy & Public Affairs* 4 (1975), 323-333, esp. 327.

12. Erving Goffman, *Interaction Ritual: Essays in Face-to-Face Behavior* (Aldine Publishing Company, Chicago 1967), 108.

13. Erving Goffman, *The Presentation of Self in Everyday Life* (Penguin Books, Reading 1982); William James, *The Principles of Psychology* (Harvard University Press, Cambridge 1983), 281.

14. Georg Simmel, *The Sociology of Georg Simmel* (The Free Press, New York 1965), 312.

15. Thomas Nagel, "Concealment and Exposure", *Philosophy & Public Affairs* 27 (1998), 3-30, esp. 6. See also Ruth Gavison, "Privacy and the Limits of Law", *The Yale Law Journal* 89 (1980), 421-471, esp. 453; Alan Ryan, "The Theatrical Model and Concern for Privacy" in J. Feinberg and H. Gross (Eds.), *Philosophy of Law* (Wadsworth Publishing Company, Belmont 1991), 346-348, esp. 347.

16. Also failures of self-presentation cause shame (or embarrassment). See e.g. Goffman 1967, 108; Leary 1996, 123; Velleman 2001, 38. There are various ways to distinguish between shame and embarrassment. One difference seems to be that shame involves great anxiety, while embarrassment is typically related to a sense of attracting unwelcome recognition. But both shame and embarrassment are negative emotional states that we would like to avoid, were it possible.

17. Gabriele Taylor has an interesting theory of shame. See her *Pride, Shame, and Guilt: Emotions of Self-Assessment* (Clarendon Press, Oxford 1985), Ch. III. See also Bernard Williams, *Shame and Necessity* (University of California Press, Berkeley 1993), Appendix 2. Velleman (2001, 41) supports the idea that failures of self-presentation cause shame.

18. A person may feel shame for “wrong reasons”. In this respect shame resembles, for instance, feelings of guilt. See e.g. Juha Räikkä, “On Irrational Guilt”, *Ethical Theory and Moral Practice* 7 (2004), 473-485.
19. Plotinus, *Enneades* IV. 3, 18.
20. See e.g. Dean Cocking, “Plural Selves and Relational Identity” in J. van den Hoven and J. Weckert (Eds.), *Information Technology and Moral Philosophy* (Cambridge University Press, Cambridge 2008), 123-141, esp. 128-129. See also Paul Ekman, *Telling Lies – Clues to Deceit in the Marketplace, Politics, and Marriage* (W.W. Norton & Company, New York 1985). Notice that unintentional “clues” may be deceptive, and that the “official view” that conflicts with the clues is what a person really thinks.
21. Eaton & Illes (2007, 395) write that it “is unlikely that all testing will yield only intended information or information that is only about the medical parameter in question”.
22. Martha J. Farah, “Neuroethics: The Practical and the Philosophical”, *Trends in Cognitive Sciences* 9 (2005), 34-40. Farah writes that “[t]echnological progress is making it possible to monitor and manipulate the human mind with ever more precision through a variety of neuroimaging methods and interventions. [...] The question is therefore not whether, but rather when and how, neuroscience will shape our future.” Elsewhere, she writes that “the demand for ‘scientific’ measures of personality, veracity, attitudes, and behavioral dispositions in our society ensures that, ready or not, these measures will have an increasing role in our lives”. “Emerging Ethical Issues in Neuroscience” in W. Glannon (Ed.), *Defining Right and Wrong in Brain Science* (Dana Press, New York 2007), 19-36, esp. 28.
23. Richard A. Posner disagrees. See his “An Economic Theory of Privacy” in J. Feinberg and H. Gross (Eds.), *Philosophy of Law* (Wadsworth Publishing Company, Belmont 1991), 349-356.
24. Rachels 1975, 325; W. A. Parent, “Privacy, Morality, and the Law”, *Philosophy & Public Affairs* 12 (1983), 269-288, esp. 276. For a more extensive discussion on why we value privacy, see



e.g. Judith DeCew, *In Pursuit of Privacy* (Cornell University Press, Ithaca 1997); David Meeler, 'Is Information All We Need to protect?', *The Monist* 91 (2008), 151-169; Herman T. Tavani, 'Floridi's Ontological Theory of Informational Privacy', *Ethics and Information Technology* 10 (2008), 155-166.

25. Juha Räikkä, 'Is Privacy Relative?', *Journal of Social Philosophy* 39 (2008), 534-546.

26. See e.g. Richard A. Wasserstrom, 'Privacy: Some Arguments and Assumptions' in F. D. Schoeman (Ed.), *Philosophical Dimensions of Privacy: An Anthology* (Cambridge University Press, Cambridge 1984), 317-332. According to Wasserstrom (1984, 331), "our culture would be healthier and happier if we diminished substantially the kinds of actions that we now feel comfortable doing only in private, or the kind of thoughts we now feel comfortable disclosing only to those with whom we have special relationships".

27. Cf. Nagel 1998, 16.

28. Immanuel Kant, *Anthropology From a Pragmatic Point of View* (Southern Illinois University Press, Carbondale 1996), 250. Hypothetically, people could be "as pure as angels" in two different ways. First, they could be "angels" in the sense that they would never think anything disruptive. Second, they could be "angels" in the sense that they would always tolerate disruptive thoughts. Actual people are not pure in either sense.

29. If our thoughts could be read "directly", that would probably affect our personal identities. These influences would be far more dramatic than feelings of shame. See e.g. Lynette Reid and Françoise Baylis, 'Brains, Genes, and the Making of the Self', *The American Journal of Bioethics* 5 (2005), 21-23.

30. There is a lot of discussion about the desirable legal limits of brain scanning. See e.g. Jennifer Kulynych, 'Legal and Ethical Issues in Neuroimaging Research', *Brain and Cognition* 50 (2002), 345-357; Brent Garland (Ed.), *Neuroscience and the Law* (The Dana Press, New York 2004); Ian Kerr and Jena McGill, 'Emanations, Snoop Dogs and Reasonable Expectations of Privacy',

*Criminal Law Quarterly* 52 (2007), 392-432; William R. Uttal, *Neuroscience in the Courtroom* (Lawyers & Judges, Tuscon 2008).

31. It is unclear why we are justified to evaluate morally people's thoughts, emotions and character traits, as these are not under people's direct control in a way their overt actions are. A plausible claim is that we are ethically accountable also for our involuntary actions and omissions. See e.g. Robert Merrihew Adams, "Involuntary Sins", *The Philosophical Review* 94 (1985), 3-31.