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## **What should we want to know about our future? A Kantian view on predictive genetic testing**

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### **Abstract**

Recent advances in genomic research have led to the development of new diagnostic tools, including tests which make it possible to predict the future occurrence of monogenetic diseases (e.g. Chorea Huntington) or to determine increased susceptibilities to the future development of more complex diseases (e.g. breast cancer). The use of such tests raises a number of ethical, legal and social issues which are usually discussed in terms of rights. However, in the context of predictive genetic tests a key question arises which lies beyond the concept of rights, namely, What should we want to know about our future? In the following I shall discuss this question against the background of Kant's *Doctrine of Virtue*. It will be demonstrated that the system of duties of virtue that Kant elaborates in the second part of his *Metaphysics of Morals* offers a theoretical framework for addressing the question of a proper scope of future knowledge as provided by genetic tests. This approach can serve as a source of moral guidance complementary to a justice perspective. It does, however, not rest on the – rather problematic – claim to be able to define what the “good life” is.

**Key words:** casuistical questions, duties of virtue, genetic information, happiness of

others, Kant, metaphysics of morals, one's own perfection, predictive genetic tests

## **Introduction**

Recent advances in genomic research have led to the development of new diagnostic tools, including tests which make it possible to predict the future occurrence of monogenetic diseases (e.g. Chorea Huntington) or to determine increased susceptibilities to the future development of more complex diseases (e.g. breast cancer). The discussion about the ethical, legal and social issues which are raised by the use of such tests focuses predominantly on the question of how to minimize possible risks –e.g. discrimination in connection with employment or insurance – and to promote possible benefits at the same time.<sup>1</sup> A number of different regulatory models have been proposed, ranging from a partial ban to restricting the performance of predictive genetic tests to the medical profession or to health purposes.<sup>2</sup>

It is interesting to observe that the ethical concept primarily used throughout this discussion is the concept of rights.<sup>3</sup> The essential question addressed is: Whose rights could be violated by the performance of a predictive test? And, if it is the case that contradicting claims seem to be equally well founded: How can conflicting rights best be balanced? This focus comes as no surprise, since it is one characteristic feature of the liberal state to limit itself to questions of rights, leaving questions concerning the “good life” to the individual. Apart from this adequate “abstinence” of the political level, there are good arguments in support of the view that philosophy as a whole is not – or no longer – able to address questions concerning the “good life” in a universally binding way and thus should confine itself to questions of justice, as exemplified by Jürgen Habermas or John Rawls (Habermas, 1991; Rawls, 1999).

Within such a framework it is obviously not possible to answer the question, What should we want to know about our future? However, it would be wrong to jump to the conclusion that this is true of every deontological theory. From a Kantian perspective it is possible to address the question of a proper scope of future knowledge, and thus to transcend questions of justice, without laying the (problematic) claim to being able to define what the “good life” is.

The following considerations are divided into three parts: In Part One I will briefly recall some basic elements of Kant’s system of duties. Special attention will be paid to what Kant calls “duties of virtue”. In Part Two this particular kind of moral obligations is meant to serve as theoretical framework for discussing the problem of future knowledge as provided by predictive genetic tests. Part Three includes a summary of the line of argumentation and some essential conclusions.

### **Kant’s system of duties**

Neither in the *Groundwork of the Metaphysics of Morals* nor in the *Critique of Practical Reason* duties – in the plural – play a major role. In his foundational writings Kant is first and foremost concerned with the exploration of the principle of morality as such and hence with duty – in the singular (Kant, 1785, p. 392; Kant, 1788, p. 8). In the *Metaphysics of Morals* (the final part of his ethical theory), however, Kant attempts to elaborate concrete moral obligations, or a system of “human duties” (Kant, 1797, p. 215ff.).<sup>4</sup>

According to Kant all duties are either duties of right (juridical duties) or duties of virtue (ethical duties) (Kant, 1797, pp. 239, 382f.). One crucial difference between the two is that duties of right may be promulgated by external legislation, whereas for duties of virtue such legislation is not possible. The reason for this, says Kant, is that duties of virtue relate

to an end which is itself a duty for the individual to have. But no external legislation can cause anyone to adopt a particular end, for this depends upon an internal condition. External actions conducive to such a mental condition may be commanded. However, to adopt a purpose as a personal end lies beyond the scope of external authority (Kant, 1797, p. 239). Or, to put it differently, the concept of duties of virtue includes that duty itself is the reason for fulfilling them while the reason for fulfilling duties of right may be mere prudence or even external coercion.

At the beginning of the *Doctrine of Virtue* (the second part of the *Metaphysics of Morals*) Kant identifies two ends of practical reason which it is a duty to have for every rational being: firstly our own perfection and secondly the happiness of others (Kant, 1797, p. 385ff.). Our own perfection comprises moral and natural perfection, the happiness of others covers their physical and moral well-being. Of course, that does not mean that promoting one's own happiness is morally wrong. However, since all humans are inclined to do this by nature, Kant says, it cannot be a duty for that would contradict the very meaning of duty (Kant, 1797, p. 386). And promoting the perfection of others cannot count as a duty either, since it is the agent as moral subject alone who can strive for perfection (Kant, 1797, p. 386).

Kant stresses that both the duty to promote our own perfection and the duty to promote the happiness of others are wide duties; an aspect of latitude is inherent in them (Kant, 1797, p. 390). That means that these duties neither determine a special way of fulfilling them nor do they prescribe a certain level which has to be reached. On the contrary, they leave room for personal decisions such as whose happiness to promote and by what means or which personal skills to advance and how (Kant, 1797, p. 392ff.). However, it would be wrong to identify ethical duties simply with wide and positive duties and juridical duties

with narrow and negative duties. Kant's system of duties is more complex than that. The *Doctrine of Virtue* also includes "perfect" duties, i.e. duties of omission which are of narrow requirement.<sup>5</sup> They arise because we must refrain from particular actions against humanity in our own person or that of others (Korsgaard, 1996, p. 21).<sup>6</sup> Yet, *all* – i.e. imperfect *and* perfect – duties of virtue are derived from the supreme principle of virtue (Kant, 1797, I. 94f.); the distinctive feature of ethical duties, in contrast to juridical duties, is therefore that they assign ends we are to promote – self-perfection and the happiness of others. As a consequence, they are in principle not legally enforceable.

However, it is important to notice that duties of virtue are by no means less well-founded than duties of right, nor are they less morally binding (Kant, 1797, p. 388ff.). Because we are moral agents – which is warranted by the fact that we are conscious of the categorical imperative (Kant, 1788, p. 30f.)<sup>7</sup> – we are strictly obligated to adopt these ends and to act accordingly. In particular these obligations are prior to any individual concept of the "good life".<sup>8</sup>

These few comments on Kant's system of duties as laid down in the *Metaphysics of Morals* and, especially, on his concept of duties of virtue show that his ethical approach is much broader than some modern deontological theories, which solely focus on rights. Nevertheless, Kant shares the view that concepts of the "good life" cannot serve as a source for universally binding moral obligations. As he demonstrates in his foundational writings only the fact that humans are rational and moral agents is a valid foundation for moral obligations (Kant, 1788, p. 33). Consequently, his approach is not exposed to the criticism frequently levelled against Neo-Aristotelian concepts. In contrast, his concept of duties of virtue opens up a way of addressing moral questions that lie beyond the limited scope of rights without leaving a deontological framework of objective reasoning.

### **Striving for future knowledge in the light of “duties of virtue”**

Against the theoretical background of Kant’s system of duties the question, What should we want to know about our future? may well find an ethical assessment, without embarking on considerations of the “good life”. To be sure, such an approach cannot provide specific rules of action. However, a system of duties of virtue can very well serve as a source of moral guidance not only on an abstract level but also for concrete cases. It will, above all, cast light on the ethical issues raised by the use of predictive genetic tests, providing a perspective different from mere justice considerations. While in terms of duties of right the central question is, Whose rights could be violated by the performance of a predictive test?, in the perspective of duties of virtue – i.e. the perspective of obligatory ends – two key questions arise: (1) Is the performance of a predictive genetic test compatible with the obligatory end to promote the happiness of others? And (2) Is the performance of a predictive genetic test compatible with the obligatory end to promote our own perfection? In the following, these two questions will be examined one by one.

(1) The information provided by genetic tests is not only meaningful for the person who is being tested but also for his or her biological relatives.<sup>9</sup> This special feature of genetic information has direct implications for the application of such tests, since it can cause conflicts of interests (The Danish Council of Ethics, 2001). One obvious and important example is that a family member is willing to undergo a genetic test in order to get information about the personal risk of developing a genetic disease while a biological relative prefers to stay uninformed. Both parties may legitimately claim to have a right to know and not to know, respectively. However, in many cases the decision of one family member “to want to know” directly effects other members of the family as well.

Sometimes keeping the information provided by a test secret will simply not be possible. Furthermore, if the gene for a disease is not known but its position on a chromosome is, a genetic test can be carried out by a child with the aid of markers. That does, however, require that the parents' markers have been determined. As a consequence, the child can only be tested if both parents actively support the child's wish for knowledge. Apparently, the benefit of a mere justice perspective is extremely limited. To be sure, also an approach based on duties of virtue cannot help to directly solve this kind of conflict of interests. However, it introduces important aspects of an ethical clarification.

Kant specifies the general duty towards others by stating more concrete moral obligations: On the one hand he states "duties of love", i.e. beneficence (Kant, 1797, p. 452ff.), gratitude (Kant, 1797, p. 454ff.), sympathy (Kant, 1797, p. 456ff.), and on the other hand there are "duties of respect", which he illustrates indirectly by correlative vices, i.e. haughtiness (Kant, 1797, p. 465f.), defamation (Kant, 1797, p. 466) and scorn (Kant, 1797, p. 467f.) As wide duties the duties of love leave room for various ways of realization, while the duties of respect call strictly for avoiding certain vices.

It is especially important to notice that, according to Kant, not all personal interests are dispensable; he explicitly acknowledges their legitimacy (Kant, 1797, pp. 432, 445f. and 452).<sup>10</sup> With respect to predictive genetic tests it would be a misinterpretation of Kant's position to claim that a potential candidate is obligated to simply and inevitably refrain from taking a test just because a biological relative has objections to it. Especially if preventive or effective therapeutic measures are available carrying out a test is not only legitimate, but may even be mandatory and offering the knowledge to an affected relative may be compulsory, too. Yet, in many cases such measures are not available so that a test result does not open up new options for medical interventions.<sup>11</sup> Moreover, tests often only

reveal an increased risk to develop a disease so that their usefulness for life planning is questionable.<sup>12</sup> Independent from this, a potential candidate is obligated to take objections of a family member into consideration. This may, for example, include discussing why performing a test could be beneficial or detrimental and trying to find a joint solution, even if this entails great efforts. It also includes tolerating opinions and judgments which differ from his own.<sup>13</sup> Finally, in the case that no agreement can be reached, every effort must be made to find a way of making up for an unequal level of information.

A more detailed assessment is only possible with regard to concrete cases and will often lead to casuistical considerations. As the “Casuistical Questions” in the *Doctrine of Virtue* show, Kant was of the opinion that moral life in its complexity cannot be adequately addressed in a solely abstract manner (Kant, 1797, pp. 454, 458). His system of duties of virtue can be understood as a framework for addressing such casuistical questions.<sup>14</sup> It is, however, a matter of moral judgment to deal with them appropriately in concrete cases (Kant, 1788, p. 67ff.). To evaluate all relevant facts can be an extremely difficult task and sometimes more than one solution is feasible.<sup>15</sup> Yet, not any kind of argumentation can be reckoned valid in this context. The casuistical questions, which can evolve in connection with duties of virtue, are genuine *moral questions* in favor of which prudent arguments cannot tip the balance. With regard to predictive genetic tests and possible conflicts of interests, for example, mere curiosity could not outweigh serious objections to a test taken by a biological relative, at least if keeping the genetic knowledge secret is not feasible. Neither can the trouble finding a solution acceptable for all parties count as an excuse not to try it.

What Kant highlights in the *Doctrine of Virtue* is that we have responsibilities towards others that transcend (enforceable) claims based on mere prudent reciprocity. With respect to future knowledge provided by genetic tests we have to cope with these responsibilities if

interests of others, especially of biological relatives, are at stake. To knowingly ignore such interests calls, in any case, for sound moral justification.

(2) As has been mentioned before, the obligatory end to promote our own perfection comprises both moral and natural aspects. As a wide duty, the duty to promote our own perfection does not positively define any specific obligatory acts. However, the set of ethical duties includes some perfect (negative) duties towards ourselves, which arise because we must refrain from particular actions against humanity in our own person. These duties of omission prohibit actions that corrupt our moral or natural abilities. In the *Doctrine of Virtue* Kant mentions, for instance, suicide and self-mutilation – as a form of “partial” suicide (Kant, 1797, p. 422f.) – the abuse of alcohol and food (Kant, 1797, p. 427f.), lying (Kant, 1797, p. 429ff.), avarice (Kant, 1797, p. 432ff.) and servility (Kant, 1797, p. 434f.) as perfect (negative) duties towards oneself.

Certainly, as diagnostic tools predictive genetic tests have in many ways the potential to increase the scope of actions. Especially, if therapeutic or preventive measures are available, they can be of great benefit and the performance of a test can sometimes be both medically and morally indicated. However, they can also bear the risk of adversely affecting our moral or natural abilities. Consequently, predictive genetic tests can become an issue for moral considerations in connection with duties towards ourselves. This can, for example, be the case if a test result indicating a severe genetic disease, for which no preventive or therapeutic measures are at hand, leads to mental overstrain or even “catastrophic events” like severe depressions or suicide (Almqvist et al., 1999).<sup>16</sup> In such cases performing a test can cause mental harm in principle comparable to (serious) physical harm. Hence, taking a genetic test would be a violation of a perfect (negative) duty towards ourselves and therefore morally wrong. Additionally, a genetic test can have an undesirable

influence on our self-perception as moral agents by supporting the belief in genetic determinism which may ultimately undermine our appreciation of moral agency in general. Two objections could be raised here: First, it may seem inappropriate to compare the physical harm caused by self-mutilation with the mental distress potentially caused by a bad result provided by a genetic test. One could argue that a test only reveals a particular genetic susceptibility or pre-disposition which does not automatically cause mental harm. Actually, many people prefer to undergo testing even if no preventive or therapeutic measures are available, because a state of uncertainty is much harder for them to cope with. A second, though related objection could be that information provided by a test itself does not affect our natural abilities, let alone our status as moral agents. Only certain ways of dealing with a test result (e.g. the performance of non-indicated medical interventions) could, from this perspective, be deemed to be morally problematic. In fact, as a means of gathering information taking a genetic test could be regarded as generally advisable since a broader informational basis will support rational decision-making. In this context the additional question arises whether it is possible to anticipate the personal reaction to a test result. And, given that this is the case, it is not at all sure whether it is in any circumstance feasible to deliberately choose to perform a test or not.

There are, beyond question, differences between the physical harm caused by (unnecessary) self-mutilation and the mental harm potentially caused by a predictive genetic test; there are, however, also strong similarities which make it legitimate to apply the Kantian arguments against self-injury to the performance of such tests. First, a strict distinction between the pure information provided by a test and the way of dealing with the test result seems inappropriate. Of course, in contrast to physical harm the effects of certain information differ from person to person and depend largely on individual dispositions.

However, an example can help to illustrate that information can be directly harmful, too: If I am seriously afraid of spiders and someone tells me that I have a big spider on my back, this piece of information will cause mental distress to me in principle comparable to the physical distress caused to me by a stab with a knife.<sup>17</sup> In such a situation it is not possible for me to disregard the spider on my back and to consider it as “pure” information. I will certainly get terrified (even if the other person is fooling me and there is actually no spider on my back). The objection that a broader informational basis supports rational decision-making is unquestionably correct. And, to resume the example, if the spider is potentially dangerous, telling me about its being on my back is – in general – right, even if I get scared, for it enables me to react in an appropriate way.<sup>18</sup> In some cases, however, a warning can be wrong: If the other person can be sure that knowing about the spider on my back will terrify me in a way that will certainly worsen the situation and that the likelihood of not getting injured is higher if I am not aware of the dangerous spider, he or she should refrain from telling me. In view of that, the distress caused by the information can easily outweigh the benefit of having it if it does not extend my scope of actions. An analogous argumentation is applicable in the case of predictive genetic tests: Whether a test result has harmful consequences and causes severe mental distress, lies, at least up to a certain degree, beyond the control of the individual. And the fact that test results are not always and not for every person mentally harmful does not contradict the claim that they can have harmful effects – just as the information about the spider will scare only some people while others will not be worried at all. Despite the parallel between the example with the spider and genetic test results one crucial point must be noted: The feeling of panic caused by the information about the spider can, beyond doubt, be a serious impairment. Nevertheless, it could be regarded as a matter of personal contentment not to want to know about the

presence of the spider. One could argue that a temporary feeling of panic is not a case of self-injury but rather of “self-discomfort”. As a consequence, in a Kantian perspective it would not be an issue of morality but of prudence to avoid it. However, results provided by predictive genetic tests can – as the empirical study by Almqvist et al. shows – cause serious depressions including suicidal tendencies. To avoid this sort of mental harm is, from the Kantian standpoint, certainly not just a pragmatical advise but a moral duty.

In order to find out whether a test result could have adverse effects that exceed the potential benefits, a critical self-assessment is necessary. The usage of genetic counselling can be an appropriate means to support this investigation (Andrews et al., 1994, p. 146ff.). And although such a self-assessment always remains in the mode of hypothetical thinking, a partial clarification of the consequences a test result might bring about seems feasible. Most likely it is much more difficult to imagine how one will react to an unfavorable test result than to the information to have a spider on one’s back; yet, in both cases an assessment seems at least to some extent viable. If such a self- assessment indicates that some particular information can lead to severe mental distress, then we should not want to get them, unless there are compelling reasons that suggest the opposite.<sup>19</sup> Finally, from an ethical perspective, the option to deliberately choose whether to take a test or not on the basis of a critical self-assessment must always be assumed. If this option does not exist, any ethical considerations would be futile at all (Kant, 1788, p. 99f.). In summary, the two objections raised above are not appropriate to make a case against the application of the Kantian arguments against self-injury to predictive genetic tests.

Against the background of the foregoing argumentation, an additional consideration is important: If a critical self-assessment reveals that a negative test result would possibly lead to severe mental distress, then not taking a test can become a moral obligation. However,

since it is essential for rational beings to choose and optimise ends and the necessary means, which includes knowledge of the future as far as possible, it becomes a matter of promoting our own perfection – i.e. an imperfect (positive) duty – to combat irrational or even pathological reactions which hinder us to use predictive genetic tests as tools for rational decision-making.<sup>20</sup> Once these efforts have been successful, we should want to know everything that is appropriate for living a moral life. However, the attempt of expanding the informational basis for the purpose of rational decision-making must not include means which lead to severe mental distress – simply because (even moral) ends do not justify (immoral) means.

Also an undesirable influence of genetic testing on our moral self-perception cannot be generally excluded. The possible strengthening of genetic determinism can be compared to the bad influence Kant asserts in the context of cruelty to animals (Kant, 1797, p. 443). He argues that being cruel to animals can weaken and finally destroy valuable traits. Since it potentially corrupts our moral abilities, it is, from an ethical point of view, problematic.<sup>21</sup> A similar argumentation seems applicable to predictive genetic tests: genetic susceptibilities or predispositions detected by a test can easily be misinterpreted as strict causation. This can strengthen the belief in genetic determinism at the cost of the appreciation of responsibility and morality in general.

Looking at the initial question, What should we want to know about our future?, Kant's system of duties of virtue does not give concrete rules of action. It does not simply determine whether to perform a predictive test or not. As it has been mentioned before, an answer is only possible with regard to individual cases and will frequently incorporate casuistical questions. In the present context, one of the questions that Kant raises in connection with suicide and self-mutilation can serve as an illuminating example: There he asks whether the

inoculation of smallpox is morally permissible or not (Kant, 1797, p. 423f.; Unna, 2003, p. 464ff.) He acknowledges that it is being done in order to avoid an infection, but at the same time points out that it may also cause the disease.<sup>22</sup> It is important to notice that – although obviously sceptical about the procedure – Kant does not finally argue for or against the inoculation of smallpox. On the contrary, he leaves the question unanswered. The interpretation itself suggests that Kant thought that it is not possible to give one generally valid answer, even in the context of a perfect (negative) duty such as the prohibition of suicide.<sup>23</sup> However, the obligatory end of self-perfection, which is directed by pure practical reason, makes the different moral aspects explicit and, as a general demand, requires to consider them carefully.

The same applies to the problems connected with predictive genetic tests. The duties towards ourselves require us to thoroughly investigate whether the performance of a test could have adverse effects on our natural or moral abilities, especially if it could cause severe mental distress or have an undesirable influence on one's self-perception as moral agent. If there is evidence that genetic information could potentially have harmful effects, undergoing genetic testing is morally permissible only if other (morally relevant) reasons can outweigh this risk, e.g. if such testing can be used for preventive or therapeutic measures. Then, of course, undergoing testing can sometimes even be obligatory. Eventually, as a matter of self-perfection, we should combat any pathological feelings which hinder us to make use of information for (moral) life planning.

## **Conclusions**

Without doubt, predictive genetic tests can be of great benefit. As diagnostic tools they can contribute to informational self-determination and to an autonomous way of life. It is,

however, commonly agreed that they also raise a number of ethical, legal and social issues. The possible use of such tests by insurance companies or employers, for instance, calls for addressing questions of rights and, very likely, for finding regulatory models in order to prevent possible abuses.

Against the theoretical background of modern deontological theories questions concerning rights seem to be the only questions for which universally binding answers are possible, not only at a political level, but also from an ethical perspective in general. Since modern societies are lacking a commonly accepted concept of the “good life”, many scholars argue moral philosophy has to restrict itself to questions of justice. However, especially in the field of bioethics, morally relevant questions arise which lie beyond the scope of the concept of rights. One example of such questions strikes in the context of predictive genetic tests, namely, What should we want to know about our future? In the foregoing remarks it has been pointed out that Kant’s system of duties and especially his concept of duties of virtue offers a framework for addressing this question without laying the problematic claim to being able to define what the “good life” is. Both the obligatory end to promote our own perfection and the obligatory end to promote the happiness of others demand to carefully scrutinize the reasons for performing a genetic test and the possible consequences a test result can have for ourselves as well as for others. Simply by virtue of being moral agents we are strictly obligated to take these issues into account. We must not violate perfect (negative) duties, i.e. duties of respect towards others and duties not to diminish our own natural and moral abilities. If there is evidence that the information provided by a genetic test could adversely affect our own (natural and/or moral) abilities or the happiness of others and if there are no other morally relevant reasons in support of performing a test, then we should not want to know what a test may reveal about our

future. However, that does not mean that someone else has the right to force us to desist from carrying out a genetic test. At the same time, we should want to know as much as (morally) possible, since a broader informational basis supports rational and moral decision-making. Consequently, we should try to transcend pathological feelings which may impede the use of (predictive) knowledge. The attempt to control our (pathological) feelings is, in fact, a matter of self-perfection and therefore an imperfect (positive) duty, too. Yet, again, no one has the right to force us to do so.

Critics may claim that an approach based on Kant's system of duties does not offer as much in the way of moral guidance concerning predictive genetic testing as the approaches that incorporate elaborate theories concerning the "good life". However, such approaches suffer from the plurality of views on what the "good life" is. None of these views can claim to be universally accepted and, as a consequence, moral obligations derived from them remain controversial. In contrast, Kant's approach does certainly allow to say more about the moral life than a mere justice perspective does. His concept of duties opens up a way to combine universal principles, which have to be accepted even in pluralistic societies, with casuistical elements, which permit to appropriately examine the complexity of moral life.

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## Notes

1. For references cf. National Reference Center for Bioethics Literature, 2002 and Deutsches Referenzzentrum für Ethik in den Biowissenschaften, 2001.
2. Cf. e.g. Republic of Austria, 1994/2002, 65ff. or the regulation proposed in Article 12 of the Oviedo Convention, cf. Council of Europe, 1997.
3. Probably the most frequently used principles throughout the debate on predictive genetic tests are “the right to know” and “the right not to know”, cf. e.g. Chadwick et al., 1997.
4. For comments on the often neglected *Metaphysics of Morals* cf. Gregor, 1963; Nell (O’Neill), 1975; Korsgaard, 1996, p. 18ff.; Wood, 1999, p. 321ff. and Timmons, 2002. For the term “human duties” (*Menschenpflichten*) see Kant, 1788, p. 8.
5. On the intricate question how the perfect/imperfect distinction and the distinction between duties of narrow/wide requirement are interrelated see Nell (O’Neill), 1975, p. 44ff., especially 49.
6. It is a challenging task to find an interpretation of those passages of the *Doctrine of Virtue* in which Kant deals with perfect duties that is consistent with his assertion that *all* ethical duties are wide duties that do not prescribe certain actions, but rather maxims (Kant, 1797, p. 410). Gregor regards, in this connection, Kant’s view that there are perfect duties to oneself which have to count as ethical duties as a “serious problem”, cf. Gregor, 1990, p. LVIIIff. and for a more detailed account Gregor, 1963, p. 113ff. O’Neill, however, has suggested a possible solution by distinguishing wide/ narrow requirements and obligations. According to her, all ethical duties are of wide obligation; the (negative) duties of omission, however, are of narrow requirement, while the (positive) duties of commission are also of wide requirement; cf. Nell (O’Neill), 1975, p. 51ff.

7. In this famous passage of the *Critique of Practical Reason* Kant says one may call our consciousness of the moral law a ‘‘Fact of Reason’’ since it is not possible to deduce it from any ‘‘antecedent data of reason’’; it forces itself, he says, on us as a synthetic proposition a priori which is not based on any (pure or empirical) intuition; cf. Kant, 1788, p. 31.
8. This must not be confused with ‘‘moral rigorism’’, an allegation that is frequently made against Kant. He emphatically advises against any form of ‘‘micrological’’ thinking that finally leads to a ‘‘tyranny of virtue’’; cf. Kant, 1797, p. 409.
9. A test result can, of course, also be relevant for other parties, especially for employers and insurance companies. Potential conflicts of interests arising in these contexts cannot be adequately addressed in an approach based on duties of virtue; they must be subject to considerations of (enforceable) rights. Consequently, the following remarks are not meant as an alternative to a justice perspective but rather as a complementary approach.
10. In particular, the duties towards others do not require self-sacrifice.
11. Even if no therapeutic measures are available predictive genetic tests can, of course, support family planning decisions-making.
12. Many hereditary diseases for which predictive genetic tests are available have a penetrance – i.e. the likelihood that a given gene mutation will result in disease – that is significantly lower than 100%.
13. Kant emphasizes that with respect to the duty to promote the happiness of others not our own understanding of well-being is essential but that of the other persons; cf. Kant, 1797, p. 393.
14. Kant would have rejected any attempt to restrict ethical thinking to an analysis of concrete cases: Either such an analysis rests on implicit principles (which have to be made explicit and justified) or it is, in the end, arbitrary; cf. Kant’s frequent criticism of the

special kind of “Jesuitical” casuistry in Kant, 1797, p. 265 and in Kant, 1795, p. 342, 385.

15. Kant was of the (debatable) opinion that a collision of duties in a strict sense is inconceivable; only multiple grounds of obligation can exist simultaneously; cf. Kant, 1797, p. 224.

16. Almqvist et al. have investigated the frequency of “catastrophic events” (suicide, suicide attempts and psychiatric hospitalisation) after predictive testing for Chorea Huntington. They found out that a total of 44 persons (0.97% of the cohort) had a catastrophic event after disclosure of the test result. It may seem that the number of catastrophic events is relatively low. However, Almqvist et al. conclude: “Overall, the results indicate that predictive genetic testing for HD may have serious risks, even though the frequency of CEs may be lower than previously feared.” (Almqvist et al., 1999, p. 1300).

17. One could object here that this is only the case with people suffering from a pathological fear of spiders (arachnophobia); an equivalent fear regarding future diseases would also be pathological. Under normal conditions, one could argue, there is no risk of serious mental self-injury through genetic testing. I think, however, that severe mental distress can result from certain information not only under pathological conditions.

18. This is basically the situation physicians are in when they have to decide whether to disclose a bad prognosis to a patient or not. Certainly, it is the right of the patient to decide whether he or she wants to know about such a prognosis or not. However, under certain conditions a physician can be justified to act in a paternalistic way and not to disclose a bad prognosis.

19. There is one more difference between the example with the spider on my back and

predictive genetic tests: With regard to spiders I have a certain influence on the probability to be exposed to big dangerous spiders whereas I do not have any influence on my genetic constitution. That does, however, only mean that in the spider case I have an additional duty: To avoid – as far as possible – going to places where big dangerous spiders live. Independent of that I should, as a matter of self-perfection, try to get my fear of spiders under control.

20. In general, Kant considered the ability to reflect on what the future may bring to be the distinguishing characteristic of humanity's excellence, but at the same time he regarded it as a constant source of sorrow; cf. Kant, 1786, p. 113. He was, however, also of the opinion that it is – at least partially – possible to control pathological feelings; cf. Kant, 1794, p. 97ff.

21. Here I am not concerned with the question whether Kant's argument against cruelty to animals itself is convincing.

22. A passage in the *Handschriftlicher Nachlaß* illustrates that Kant also admits the awareness of the permanent danger of getting sick and the hardships that can cause; cf. Kant, 1938, p. 304.

23. Unna argues that Kant does give answers to four of the five casuistical questions on suicide including the one regarding the permissibility of the smallpox inoculation in his other writings. However, Kant explicitly states that casuistry is neither a science nor a part of it (Kant, 1797, p. 411). This implies that it is not possible to derive general statements or rules from casuistical considerations, since this is, according to Kant, a specific feature of science. Even if Unna is correct in assuming that Kant was of the opinion that suicide is morally wrong under any circumstances it can only be decided on a case-by-case basis appreciating all relevant factors whether an act has to count as (morally wrongful) self-

murder or as something else.

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