Mapping the Language of Research Biobanking: An Analogical Approach[1]

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Abstract New medical technologies provide us with new possibilities in health care and health care research. Depending on their degree of novelty, they may as well present us with a whole range of unforeseen normative challenges. Partly, this is due to a lack of appropriate norms to perceive and handle new technologies. This chapter investigates our ways of establishing such norms. We argue that in this respect analogies have at least two normative functions: they inform both our understanding and our conduct. Furthermore, as these functions are intertwined and can blur moral debates, a functional investigation of analogies can be a fruitful part of ethical analysis. We argue that although analogies can be conservative, they are nevertheless useful because they bring old concepts to bear upon new ones. We also argue that there are at least three ways in which analogies can be used in a creative manner. First, understandings of new technologies are quite different from the analogies that established them, and come to be analogies themselves. That is, the concepts may turn out to be quite different from the analogies that established them. Second, analogies transpose similarities from one area into another, where they previously had no bearing. Third, analogies tend to have a figurative function, bringing in something new and different from the content of the analogies.

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Introduction

New medical technology often produces heated moral debates and creates work for an army of verbose bioethicists.[2] One of the reasons for this is that new technology is extremely productive, normatively speaking: it urges usto find norms of comprehension (what the technology is) and norms of conduct (how we should handle it). A crucial point in the formation of norms is the emergence of a new technology. What happens when a technology is being established? What begets and nourishes the normative processes? How do we come to understand and cope with the new and the unknown? One answer to this is: through analogies. Analogies tend to help us to constitute our understanding of the new phenomenon and guide us in our attempt at coping with it. As Roland Barthes declared: "no sooner is a form seen than it must resemble something: humanity seems doomed to analogy".[3] When we are faced with a new and unknown phenomenon, we tend to apply analogies in order to understand and cope with it. Moreover, analogies are at the basis of our reasoning (Lakoff and Johnson 1980).[4] This is particularly so with new technologies (Latour 1986: 173–183).

The objective of this chapter is to investigate the role of analogies in the formation of norms at the point of emergence of new technologies. In order to do so, we will use research biobanking as an example, i.e. the procurement, storage and use of biological material (and data) for research purposes. The reason for this is that it is a technology in emergence, a technology where the norms have not yet settled. Furthermore, it is an area that is rich in analogies. It will be argued that analogies have a double normative function in relation to new technologies:

- They shape our perceptions and conceptualizations – and thereby our comprehension – of phenomena
- They guide us in our handling of phenomena

For the first function we suggest the label "epistemic normativity", while "moral normativity" seems to be an appropriate label for the second function. Furthermore, the analysis reveals that analogies can be used to classify a phenomenon (classificatory), to predict phenomena (inductive) and to persuade of a certain conduct or regulation (persuasive). Moreover, analogies can be conservative, e.g. when stemming from existing and relatively fixed areas of life, or they can be creative, e.g. when they come from quite different areas of life and are used in untraditional ways. Analysing the analogies applied with respect to emerging technologies can be of help in clarifying the normative debate.

[2] Including, of course, the authors of this chapter.

[3] Roland Barthes is here cited from Silverman and Torode 1980: 248.

[4] We here use the term "analogy" synonymously with "metaphor" in cognitive linguistics. See also note 6 below. It is also argued that analogy is "the core of cognition" (Gentner et al. 2001).

Analogies

Analogies are used in a wide range of ways in relation to new and emerging technologies in general and in relation to research biobanking in particular. One prominent example of explicit and implicit uses of analogies as analytical tools to clarify the ethical and regulatory challenges raised by biobanking is a seminal article by George Annas (Annas 1999). Here Annas uses organ transplantation, blood transfusion and foetal tissue donation as analogies to both explicitly explore what placental blood biobanking is, and, implicitly, to argue for a particular way of conceiving of it and handling it. This double use of analogies corresponds well with general theories on analogies (Govier 2005) where analogies have both an explanatory and an argumentative function. However, the article does not use the term "analogy". Rather, Annas talks about "models". In another article using analogies in the field of medicine (Strand et al. 2004/2005), terms such as "metaphors" and "models" are used interchangeably for the same concept.[5] Hence, before we set out on our analogical endeavour, we have to define what we mean by analogy.

"Analogy" has its root in the Greek word *analogia* meaning "proportion", "correspondence" and "resemblance", and is defined as similarity in some respects between things that are otherwise dissimilar or a comparison based on such similarity. In "analogy" there is an aspectual comparison meaning that X resembles Y in certain aspects, and that there is a chance that other similarities will also be found. For example, the black and white photograph film has been used as an analogy to X-ray films. Thus, the key function of an analogy is the transfer of meaning from the analogue to the target. In other words: "An analogy establishes an interrelation between two different spheres or domains. It enables us to see aspects of the domain in question in the light of another domain" (Leuken 1997: 219).[6]

The point is not to claim that there is only one correct definition of "analogy", or even claim that "analogy" is the only acceptable term (Black 1962; Childress 2004). It is rather to suggest that applying comparisons from other areas to new, emerging ones is of particular interest to the ethics that is concerned with new technologies.

Epistemic Normativity of Analogies

Hence, although Annas uses the term "model", he quite clearly applies analogies (according to our terminology) to establish a concept of what a certain phenomenon is. The analogies of organ transplantation, blood transfusion and foetal tissue donation are applied to explore what becomes of biological material as a result of new technologies. These are not the only analogies that are used to understand biological

[5] Even scholars tend to use the terms "metaphors" and "analogies" interchangeably, e.g. Latour 1986: 246–247.

[6] As indicated in note 4, we apply the term "analogy" in accordance to ordinary language, and synonymous to the conceptual metaphor in cognitive linguistics (http://en.wikipedia.org/wiki/Analogy). Accessed on May 11, 2009.

material: waste, natural resources, organ donation, gift, commodity, stock market and recycling are prominent in the literature as well (Hofmann et al. 2006b).[7]

In the same manner, as analogies are used to understand biological material (as a result of new technology), analogies tend to be used to understand new technology in general. Analogies play a primary role in exploring and conceptualizing new technologies. The point is to find ways to reason about unfamiliar cases on the background of familiar ones. Explorative analogies can be classificatory: they can be used to classify certain phenomena. If an analogue has characteristics x, y and z, and the phenomenon in question, e.g. biological material, also has the characteristics x, y and z, it can be argued that the phenomenon should be classified in the same way as its analogue. Hence, if umbilical cord blood cells in a biobank have all the features of stored donated blood, the bank could be classified as a blood bank. This classificatory function of analogies is a priori in that the analogy can be made on the basis of reflection alone (Govier 2005: 1521–1524). The main point is consistency; similar cases have to be classified in the same way, because similar cases have to be treated similarly.[8]

A different kind of explorative application of analogies is inductive, where the analogies are well-known real cases that are used to predict the features of new phenomena, such as emergent technologies. We can use blood-bank blood as an analogy to predict characteristics of umbilical cord blood, including its social characteristics. However, how relevant and reasonable these analogies are, we do not know. The future value of umbilical cord blood is unknown, and analogies trying to help us predict an answer are speculative. The point is that the phenomenon in question shares some characteristics with its analogue, which makes us stipulate or predict that other characteristics will be shared as well.

In this manner analogies guide us in establishing our understanding of new technologies and phenomena, such as biological material, in at least two ways: by classification and by induction.[9]

Moral Normativity of Analogies

Correspondingly, analogies appear to play a central role in establishing certain modes of conduct related to new technologies. Analogies are conceived of as a device in argument, and are used to promote certain moral norms. If one can convince someone that biological material is waste, issues of property rights and remuneration are settled. The point is to bring undisputed cases to bear on an unsettled or disputed case.

The precedent system of law is based on this use of analogies, presuming a principle of consistency; equal cases must be treated equally. The point is exactly the

[7] For this see also chapter called “The Use of Analogical Reasoning in Umbilical Cord Blood Biobanking”.

[8] This also entails that the pointing out of dis-analogies can have an important function.

[9] For other relevant examples see Ratto 2006; Maasen and Weingart 2000.

same in law; analogies are used to fill in "holes" that are not explicitly covered by law, by showing that certain cases resemble others that clearly fall under the law.

Analogies can have a classificatory function in argumentation in the same manner as in exploration. Analogies may be used to support a thesis that a thing may have a certain property (Whaley 1998) or that a certain case falls under a particular analogy, and therefore has a certain solution. For example, arguing that biological material has a series of properties in common with waste can be used as an argument that the "donor" (or more accurately in this case "discarder") has no property rights.[10]

In addition to the classificatory function of argumentative analogies, they also have a persuasive function (Whaley 1998; McCroskey and Combs 1969; Yanov 1996). Firstly, an analogy may be used to support one's argument or offer counter-arguments or refutations (Baaske 1991). For example, the gift analogy may be applied when arguing against reimbursement of the procurement of biological material, while the commercial bank analogy may be used to argue in favour of reimbursement. Secondly, analogies may be used (persuasively) as an influence device (McCroskey and Combs 1969: 333–339) promoting one's credibility or assaulting the opposition's character or competence.

Although we like to think that the supportive/refutative function of analogies is the most prominent in argumentation, analogies appear to be used extensively to modify credibility as well. One example is the famous Moore case[11] where the analogy of modification and manufacturing was applied to the work of the scientists to undermine Moore's claim that the cells of the cell line established from his removed spleen were "his cells". All persuasive uses of analogies may be effective, but are also subject to a series of fallacies (Govier 2005: 1521–1524).[12]

The point is not to give an exhaustive account of the argumentative function of analogies, but only to indicate that analogies do serve a variety of functions in argumentation, and that many of these functions may be at play in establishing moral norms for handling new technology in general, and with respect to biobanking in particular.[13] In sum, one can say that the explorative function of

[10] It is worth noting that in establishing new concepts due to the introduction of new technology other concepts may change as well. X-ray apparently changed our idea of "private parts" and of privacy as such, see for example Kevles 1997. In the same manner, research biobanking may change our concept of privacy and remuneration in health care. Hence, analogies and the concepts they establish may be morally normative in other areas than only with regards to a particular technology.

[11] Moore v. Regents of the University of California, 793 P.2d 479, (Cal. 1990).

[12] Moreover, analogies have other normative functions as well, e.g. in casuistry, where they are applied in order to make analogical inferences from related examples in order to reach conclusions in difficult cases and to set paradigm cases, see for example Jonsen and Toulmin 1988. Additionally, analogies are applied to analyse and develop ethics in itself. Examples like the survival lottery case (where organs are taken from one person in order to save the life of several persons), the trolley case (where a runaway trolley is proceeding down a track towards five workmen, but there exists a possibility of branching off the trolley to a track where there is only one workman), and other extreme examples have been used to explore moral intuitions and to refine and develop moral philosophy, see for example Thomson 1990; Kamm 2003.

[13] It is argued (White 2006) that analogies lack persuasive power, and that we need ethos, pathos and logos as prescribed by Aristotle in order to make analogies normative. We do think that the literature on analogies (and metaphors) and the examples given here and elsewhere (Neal 2006;

Table 1 Various roles of analogies

	Epistemic normativity	Moral normativity
Role of analogy	Explorative	Argumentative
Kinds of functions	Classificatory	Classificatory
	Inductive	Persuasive
		(a) support an argument
		(b) refute an argument
		(c) modify credibility

analogies can be employed in a classificatory and an inductive manner, and that the argumentative function of analogies can be used in a classificatory and a persuasive way (Table 1).[14]

Analogical Analysis

It is interesting to note the close relationship between the explorative and the argumentative function of analogies, i.e. between their epistemic and moral normativities. At the same time, as one is arguing for a certain concept of biological material in terms of analogies, one is promoting a certain conduct with regard to it. One of the reasons for this close relationship between the explorative and argumentative function of analogies may be that it is difficult to establish a practice with respect to a new technology if we do not know what it is. In order to conceptualize the new technology, we use analogies and it should not be surprising that the same analogies may have a morally normative function as well.

This relationship can itself be used argumentatively; under cover of pretending to investigate different understandings of biological material, the analogy can be used covertly in an argumentative way.[15] Conversely, in a moral debate, the analogies used argumentatively can turn out to have explorative elements. Accordingly, analogies may be used to reveal the way we conceive of a certain issue. They may be used to frame a certain domain, and to show which ways of seeing things are underlying a particular issue (Leuken 1997). For example, the organ donation analogy may be used in the case of umbilical cord biobanking in order to support not only certain understandings of biological material, but also to display and question the framework underlying such understandings.[16]

Holland 2006) are convincing. Besides it seems that the resemblance with familiar things or experiences in life can stir our emotions (pathos), convince us of its truth (logos) and evince the credibility of the analogist (ethos).

[14] Arguments from analogies are arguments in informal logic, and as such are inductive and weak, see for example Salmon 1973. Nevertheless, analogical arguments are important in ordinary language and they are arguments by showing (in contrast to arguments by saying), and as such important rhetorically, see Lueken 1997: 218.

[15] It is also important to note that a persuasive analogy can be used to hide aspects of the new situation. The "war on terror" analogy does for instance (intentionally?) hide big differences between this kind of "war" and conventional war. Furthermore, analogies may be used as normative devices under cover of being explorative. The selection of explorative analogies is hardly neutral.

[16] Leuken refers to Wittgensteins use of analogies in PI (§18) to underscore this.

Hence, sorting out the explorative and the argumentative function of analogies, as well as their classificatory, inductive and persuasive uses, may be of great value when debating new technologies. Moreover, analysing analogies can have a clarifying and emancipatory function, thus increasing the transparency of conceptual and moral debates. This raises the question of how to assess analogies and their uses.

What Is a Good Analogy?

The answer to this question is strongly dependent on the purpose of an analogy. If we intend to explore a new field, the criteria for a good analogy are quite different from the ones used if we intend to promote a certain conduct. In the latter case, great similarity between the analogue and the target gives weight to the argument. However, great similarity is not necessarily a prerequisite for a good analogy if the intention is to explore a new phenomenon (e.g. a new technology). As will be discussed below, some distance may add further value to an analogy.

Further, the conceptual aspect of an analogy can be used to add to its argumentative force. In this case it seems that an increased epistemic similarity will strengthen the moral argument. Thus, for example, the more we can convince of the similarity between umbilical cord blood and biological waste, the more forceful the analogy also becomes at promoting a particular conduct, i.e. of using the contents of umbilical cord blood biobanks without remuneration.

Correspondingly, the similarity between the analogue and the target with respect to moral norms can be used as an argument for a particular understanding, e.g. that certain biological material should be classified in a certain manner. By emphasizing the special moral importance of genetic information, we may strengthen a claim that all tissue has to be classified in the same category and receive special protection. Accordingly, one might argue that analogies carry different weight if they are used to argue from classificatory analogue to a target in an inductive or persuasive manner or the other way around.

Hence, the value of an analogy depends on the purpose and the context. The point is that these purposes can be hidden, and that we may initially be carried away by the sheer rhetorical force or novelty of an analogy. A closer analysis of analogies is therefore almost always necessary to reveal any covert normative implications. Only by revealing the complete analogical function in a particular context can one discuss its success. We will return to the question of how we can use analogies, both explorative and normative, in bioethical debates below, but first we will address the question of how analogies work in practice.

The Analogy Is Dead: Long Live the Analogy

We use analogies to establish norms of comprehension and conduct with respect to a phenomenon. The phenomenon can be a technology, such as molecular analysis of cells, new phenomena that the technology provides (DNA), or known things where

new technology forces us to establish new norms because it makes the old norms obsolete (stem cells).

However, the phenomena that are conceptualized by analogies can themselves become analogies and be used quite independently of the analogies that established them. When analogically established things or practices themselves become analogies, the originally employed analogies appear to loose their primacy; they are dead (Lakoff and Johnson 1980). So, the thing itself (original target) can be used as an analogy quite independent of the analogies that established its concept. For example, when a concept of biobank is established, the bank analogy no longer plays any role, and "biobank" can be used as an analogy for other phenomena without any reference to commercial banking. The reason for this may be that the explorative and argumentative force of an analogy vanishes when the phenomenon has become conceptualized.[17]

The analogies tend to stiffen or congeal after norms of comprehension and conduct have been established, and the new technology (or phenomenon) can then itself be used as an analogy. For example, the gift analogy has been used to establish organ and tissue donation, whereas organ and tissue donation subsequently has been used as an analogy to argue against unconsented caesarean section.[18]

Thus, it appears that when a concept is established, the establishing analogies become obsolete. They no longer have bearing. One consequence of this is that analogical analysis is most fruitful at the emergence of new technologies, and, at a certain point, the explorative and argumentative analogies lose their reflexive function. This independence of the analogies that establish a certain concept raises the question of how independent a concept actually can be of its formative analogies in general. How much do the analogies bear on the concept they create?

Old Analogies for New Technologies?

So far we have said that analogies are used in explorative and argumentative ways and that they are important parts of moral debates about technology, especially emerging technologies, and that an analysis of analogies is of value to ethical analysis. However, what does analogical reasoning actually mean with respect to our ability to address new technologies? For instance, if our concepts of new technologies are based on "old analogies" i.e. analogies of established practices, do analogies not restrict our conceptialisations of new phenomena? Are analogies conservative? Can they address things that are really "unique, different or simply not captured by the existing analogy" (Johnson and Burger 2006). That is, is Gerald

[17] Some scholars would prefer terms such as "framed" or" normalized" instead. Subtle distinctions in this field is not the point here, but rather that norms of conception are established (and become fixed).

[18] In re. A.C. 1990, 57B A.2d 1235 (D.C.App.). This is only one example. We do not say that the argument from the analogy is valid.

Dworkin right when he calls analogy and precedent "the weapons of conservatives" (Dworkin 1988: 37)?

One may argue, correctly we think, that using established analogies from closely related areas may lead to the preservation both of old norms of comprehension and conduct and of their related practices instead of developing new concepts to understand and cope with the new phenomenon or technology actually at hand. In other words, trying to make new technologies fit images of existing technologies may not only generate conservative practices, but may as well obstruct our understanding of emerging technologies.[19]

The way we choose and use analogies when faced with new technologies may vary, but in most cases our analogical behaviour is triggered by similarities with the new phenomena. For example, in the debate on how to handle biobank material, more specifically umbilical cord blood, established analogies, such as waste and blood donation, were applied due to their physical and practical similarities (Annas 1999).

From this seems to follow that old analogies cannot be used to (1) understand radically new technologies or (2) understand genuinely new aspects of existing technologies. Consequently, the way to proceed would be to search for "new" analogies in order to cope with technological novelties. Thus, if the purpose is to explore a new technology, i.e. its elaborate epistemic normativity, one should rather apply analogies from quite distant areas so as to develop appropriate forms of understanding, instead of using established analogies from the same area or from closely related areas. In other words, we should take advantage of the polysemic nature of analogies (López 2006). As such, this could also shed light on alternative ways of handling technologies (moral normativity) that otherwise would not have been discussed.

Exploration by Analogy

With regard to exploration of procurement, storage and use of biological material for research purposes, we therefore suggest investigating the conceptual potential of analogies from a range of areas outside medical research, where people transfer something to a common institution. Examples of such analogies are ordinary commercial banking, associations, clubs (e.g. book clubs) or unions, libraries, military conscription, taxation, and management of pieces of art (Solbakk et al. 2004).[20]

Membership-related analogies could be of help in highlighting mutual relationships and responsibility, whereas commercial banking analogies, such as bank accounts, could be used to explore aspects of ownership, loan, interests and remuneration. Finally, we suggest employing insurance analogies to analyse aspects

[19] For a substantiation of this claim see Hofmann et al. 2006b and the chapter called "The Use of Analogical Reasoning in Umbilical Cord Blood Biobanking".

[20] This last analogy plays a prominent role in the commercial world (some art pieces are considered "invaluable", are protected, and have a cultural and symbolic dimension etc.) For this analogy, see also the chapter called "The Art of Biocollections".

of self-interest and risk.[21] Thus, when analogies are imported from quite distant areas, they may serve as fertilizers or catalysts in the shaping of our norms of comprehension.

The point is that transposing analogies from other areas of life creates a freer and more innovative ground for establishing new norms with respect to new technologies than just applying the most obvious and clear-cut analogies. There is a diversity in life that can make such a transposition of analogies fruitful. Furthermore, applying several analogies, instead of relying on single analogies, facilitates a creative rather than a conservative application of analogies (Shelley 2003; Holyoak and Thagard 1996).

Moral Argument by Analogy

As indicated earlier, the application of distant analogies is not symmetric with respect to their epistemic and moral normativity. An analogy from a distant area may be fruitful in an explorative sense, but not very convincing argumentatively. One reason for this may be that whether arguments are convincing appears to depend on how well we recognize the examples, i.e. how congruent the analogies are with our own experience. To take an example to illustrate this point: if we compare the donation of biological material to a research biobank with voluntary communal work (which in Norwegian has a special word, "dugnad")[22] to argue that this should be considered a voluntary contribution everybody should make, it is not likely that we will make a good case except in societies where the tradition of voluntary communal work is alive and well acknowledged. This corresponds with evidence that too extensive uses of analogies can reduce credibility (Whaley 1998). Furthermore, it is clear that transposing analogies is inductive, as one applies similarities in some areas to have bearing on other areas (where we yet have no definitive knowledge).

Hence, transposition of analogies from areas quite distant from the field in question appears to be more fruitful in exploration than in argumentation. Nevertheless, analogies from distant fields may generate new ideas for the handling of new technologies, even though their argumentative force is weak.

Old Dogs and Old Tricks: Are Analogies Doomed to Be Conservative?

Although this alternative approach to, or form of, "analogical behaviour" may enable us to address challenges related to the understanding and regulation of new phenomena in a different way, it may still be the subject of the same objection of being conservative. Analogies stemming from other areas are still analogies

[21] See Hofmann et al. 2006b and the chapter called "The Use of Analogical Reasoning in Umbilical Cord Blood Biobanking".

[22] For the dugnad analogy, see the chapter called "The Use of Analogical Reasoning in Umbilical Cord Blood Biobanking".

from existing and established fields, and as such, they may infringe upon our open-mindedness to the genuinely new. Thus, it could be argued that the principal function of analogical behaviour is to confirm already-established modes of conceptualization and forms of regulatory conduct. Even if the analogy makes us able to "see aspects of the domain in question in the light of another domain", this is still a view within the horizon of an established domain.

The difficult question is of course whether we can transcend the familiar and known when we are confronted with new phenomena, or whether Roland Barthes is right. However, even if he is, there are several reasons to believe that there are ways to teach old dogs new tricks, i.e. to attain new concepts from existing analogies. First, there appears to be empirical evidence available to demonstrate that our concepts of new phenomena may differ substantially from already-existing concepts as well as from analogies that were applied during the establishment of the new concepts. For example, our concept of DNA is quite different from anything that we had conceptualized or known in advance. This example furthermore indicates that although some concept of DNA was established early on, this does not preclude later gradual changes in our understanding. Correspondingly, our concepts of biobanks are dissimilar from those of commercial banks (although in many ways similar to our concepts of blood banks).

Second, it seems that analogies can have catalysing or fertilizing functions that reach beyond their epistemic and moral normativity. It is argued that analogies have a figurative function that goes beyond the "literal similarities" (Hawkes 1972). It is worth noting that this figurative function of analogies is as relevant in science as in other fields (Campbell 1920: 129; Hesse 1966;1981; Pickering 1999; Shelley 2003). There appears to be some kind of dialectics between the analogue and the trace resulting in a synthesis which is distinguished from both of them.

Recycling and Reshaping Analogies

The point that has been made is that analogies are applied in order to explore and argue for certain concepts of new technologies, and phenomena that stem from them, such as biological material. These analogies tend to be normatively productive in two different ways:

- Epistemically normative, i.e. to explore potential comprehension (e.g. what biological material is)
- Morally normative, i.e. to argue how things should be (e.g. how we should handle biological material)

Hence, analogies are normative in two different ways: they shape our comprehension and our conduct. Furthermore, the explorative and argumentative functions of analogies are related. If biological material is waste, we should not look for reimbursement, and this can make the conceptual and moral debates blurred. Additionally, the value of an analogy varies according to the purpose and the context of its application. Hence, an analysis of analogies can add to the moral debate and be a fruitful part of the ethics of new and emerging technologies.

Furthermore, the new concepts that the analogies establish may themselves serve as analogies. Biobanks may become analogies for other technologically related phenomena. Even more, the concepts may become analogies for changing the analogies that established it. For example, the waste analogy may be important for understanding (umbilical cord) biobank material. The biobank material may consequently change our understanding of waste. Hence, analogies tend to have some kind of fertilizing or catalysing function. But they are often themselves "consumed" in the process. Analogies are used to establish norms of comprehension and action, but then become obsolete (as a remainder). Analogies give life to the source of new analogies.

Altogether we must agree with Roland Barthes' claim that we are doomed to analogy, and that this indicates that analogies are conservative. Analogies tend to be epistemically and morally more forceful if the similarities between analogue and target are many. However, as this chapter has tried to explore, it is not necessarily so. In our view, the justified critique of the inherent conservatism of analogies can be countered by employing three arguments:

1. Empirical: in which new concepts are quite different from analogies available. They themselves can become analogies for the concepts they drew upon.
2. Transposed analogies: in which transposed similarities from one area to another bring new perspectives into the field. Therefore it can be useful to apply analogies from quite different areas.
3. Figurative function of analogy: in which they tend to have important creative functions resulting in uniquely new concepts and with potentially new conduct. Consequently, "old" analogies may be used to give rise to new concepts of technologies, be they old or new. It is possible to teach old dogs new tricks! This can be of relevance to the ethics of technology in general, as well as in the field of research biobanking.

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