

Safer by Design and Trump Rights of Citizens

Angela Kallhoff 

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Abstract The debate on “safer by design” has primarily been focused on strategies to render products safer during the design process. This article focuses on correlated basic legal rights of citizens. The reference to “trump rights” is helpful in highlighting two normative claims: Firstly, products that are “safer by design” are suitable instruments to protect the bodily integrity and health of potential users. Both figure as trump rights in Ronald Dworkin’s sense. In this perspective, “safer by design” strategies can guarantee some most basic rights of citizens. Secondly, the debate on trump rights also suggests that safety needs to be regarded as part of a more comprehensive normative framework. Even trump rights are competitive in that a plurality of rights needs to be respected. A final section gives evidence that both claims resonate with recent insights in debate on the precautionary principle. This section also highlights the recent emphasis on environmental concerns.

Keywords Precaution · Trump right · Safer by design · Privacy by design · Environmental ethics

Nano-particles are manufactured objects. They do not remain in the laboratory. Instead, as ingredients in sun-tan lotions, as part of surface materials, and as

ingredients that provide new and possibly attractive characteristics of innovative materials, they are released into the environment. They also are part of physical structures that are in direct contact with persons. In order to work against the risks of nano-materials as well as positive prospects in the context of new applications, proposals to make nano-materials “safer-by-design” have recently been put on the table.

The background for addressing “safer by design” as a reliable option to address nano-risks is the debate on “privacy by design.” This proposal is made in the context of information technology in order to include principles of fairness, in particular Fair Information Practices (FIPs), into the design of information processing technologies and systems. The promises connected to “privacy by design” are the following ones: Because privacy interests are important, they are anticipated in the design-process. They are addressed proactively. In addition to preparing the physical structures accordingly, business practices and governance also incorporate respect for the privacy claims of potential users of the devices [1]. The application to nano-materials is straightforward. Instead of addressing ethical concerns after manufacturing products that include nano-materials, respect for ethical concerns should guide the *process* of manufacturing. In particular, safety should also be integrated into the design of products. Following proposals of *value-sensitive design*, a variety of values can be integrated into the design of objects, including safety [2].

This paper argues that a “safer by design” approach is suitable for taking two normative insights into

A. Kallhoff (✉)
Fakultät für Philosophie und Bildungswissenschaft der Universität
Wien, NIG, 3.Stock, A0306, Universitätsstr 7, 1010 Wien, Austria
e-mail: angela.kallhoff@univie.ac.at
URL: <http://homepage.univie.ac.at/angela.kallhoff>

account: Firstly, safety of products that also provide risks to potential users is not just one claim among others. Instead, it figures as being related to “trump rights,” which are rights that are of utmost importance in a constitutional state. Trump rights are just the other side of the coin when it comes to risky products. Secondly, the endorsement of trump rights also includes another thought: Instead of focusing on one single, most important right, according to Ronald Dworkin [3], trump rights need to be balanced against each other. Instead of focusing on one single right, it is necessary to counterbalance claims of safety against other most basic claims, including free access to information and freedom of choice.

After having outlined this approach in section one, in section two, the paper argues that it converges at some point with a prominent way of addressing safety-issues, which is the precautionary principle. Instead of regarding a trump right approach as being opposed to the precautionary principle, recent debates on the precautionary principle point into the same direction. Some authors have already argued that a principle of precaution in addressing ethical challenges represents an important backdrop, yet one that needs to be addressed in specified contexts and in the context of value pluralism [4–6]. In particular, environmental protection is also part of this debate.¹

Safer by Design and Trump Rights

The interpretation of a “trump right” can be derived from Dworkin’s concept of a “trump” in legal philosophy. This interpretation helps to highlight another side of the claim that products should be rendered “safer by design.” Instead of focusing on properties of the object, safety of products also relates to the basic rights of persons, which are the rights to bodily integrity and health. A “trump right” is considered to be of utmost importance; it trumps other concerns, not as an exclusive value, but as a value that represents a non-alienable right of a person. In order to explain how “safer by design” relates to trump rights, it is helpful to at first have a closer look at Dworkin’s proposal to classify a right as a trump right [3].²

¹ I wish to thank two anonymous reviewers for particularly helpful comments on the arguments provided in this contribution.

² For a critique of this approach, see e.g., [7].

He argues that a distinguished group of rights, including the right to free speech, to integrity of body and soul, and to freedom of association, classify as “trump rights.”³ In this context, the meaning of a “trump” differs from “basic constraint” and from “most basic concern.” In particular, in a distinguished way, a trump right represents an unalienable right; moreover, it outrivals any important alternative in assessing basic values. Dworkin argues that even when a utilitarian assessment results in the judgment that—all things considered—a policy is favorable in the utilitarian sense, which means that overall it is the best for the common good in terms of welfare and happiness, a trump right cannot be overridden but deserves absolute concern [3]. This interpretation of certain basic concerns as just trumping all other concerns has been of particular importance for the philosophy of rights. Here, this cannot be presented in detail. Yet, it should be noted that the idea of certain trump rights is mirrored in constitutions particularly emphasizing the integrity of the body and health of persons and—more inclusively—living beings in nature.

I propose that this interpretation of a “trump” can be applied to the debate on “safer by design.” Instead of focusing on the object and its design, this approach focuses on the subject and its basic rights. Presupposed users might suffer harm from nano-products, and since they have a right to bodily integrity and health, it is right to demand the design of products that provide the tools for guaranteeing these rights. Different from approaches that guarantee the value of rights by means of additional devices or by designing spaces in which the products can be applied under safety-standards, safer-by-design rests on a different strategy: It tries to render products safer in order to provide the means for realizing the right to bodily integrity, independently of where the products will be used and by whom.

Yet, it also needs to be noted that Dworkin does not defend a single, most important right by invoking “trumps.” Instead, political societies should guarantee a range of privileges and constraints to each citizen. Going back to Dworkin, there is only one most important right, which is the right to be treated with equal respect by governments [8]. In Dworkin’s view, this includes a general right to equality and to liberty,

³ This resonates with discussions about basic rights in the American Constitution, explaining the choice of the trump rights he presents. Yet, the more general points can be applied to other basic rights as well.

yet also freedom of speech. Each of them can be spelled out in more detail. In particular, even when political decisions will certainly serve the common good (utilitarian justification), this decision can be overridden by basic rights of citizens.

This interpretation of trump rights has an immediate impact on the debate of “safer by design.” An assessment of this strategy as an improvement on safety-standards needs to be integrated into a broader context. In particular, “safer by design” also needs to be evaluated against the background of other equally important rights. They include various types of liberty, such as freedom of information and freedom of choice. If a “safer by design-product” has a negative impact on freedom of choice, this also needs to be taken into account. Overall, the gains in terms of safety need to be integrated into a broader assessment of concern for a range of most basic rights of citizens.⁴

Extended Precaution and Environmental Concern

So far, I have debated the proposal to make nano “safer by design” as a suitable tool for guaranteeing some most basic rights of citizens. I shall now go back to the debate about safety-issues that resonates with the “precautionary principle.” This principle is at the heart of the debate when it comes to risks of nano-materials. My claim in this section is that even though at a first glance the call for a “precautionary principle” differs significantly from a strategy to make products safer by design, on a meta-level, both approaches cohere in an important respect. Recent approaches to the precautionary principle take into account that it needs to be integrated in a more comprehensive assessment of risks. Comparable to the assessment of a range of trump rights, precaution is also regarded as just one aspect of a much broader evaluation of strategies to frame risky technologies. In particular, environmental concerns have been regarded as important ingredients in a more comprehensive assessment.

The precautionary principle that serves as an important backdrop when assessing risky new technologies has also played a major role in nano-ethics.⁵ Yet, recently it has been supplemented by a more comprehensive

assessment of risk. Authors now favor an assessment that takes into account a range of different values. In particular, risks are being assessed against the background of values in “good governance” [4, 12]. Another indication is the growing field of research focusing on “responsible research.” It is one particular trait of the nano-discourse that it has been correlated with attempts to assess expectations in the field of nano-development [13]. Due to the specific characteristics of nano-particles and due to the challenges resulting from research at the interface of natural systems and technological options (Nano2Life), it has been argued that an evaluative assessment of research goes beyond classical schemes [4]. It is part of the recent debate on responsible research to also discuss whether or not responsibilities in the development of nanotechnologies go beyond and differ from toolboxes for researchers in comparable fields of application, such as more generally in biotechnology.

McGinn [12] argues that nanotechnologies do not only pose new challenges. He also states that some authors think that nanotechnology researchers should take a leading role in improving the stewardship of the scientific enterprise [12].⁶ This is particularly true regarding new nano-materials. McGinn argues as follows: “Regarding new nano-materials, NT [=nano-technology] researchers must always bear in mind a salient fact: *there is no guarantee that an element known to be safe at the macro- and/or micro-scales will also be safe at the nano-scale.*” ([12] 5). From this, he concludes that one important aspect is that the lab group needs to discuss safety issues and needs to develop a system of reporting ([12] 5). He demands a new culture of responsibility, but also of exchange and reporting in the laboratory scenario. Even though McGinn presents only one, yet important voice in the debate, it is important to recall his insights in order to frame the concept “safer by design” accordingly.

One important aspect is the demand to not restrict safety-issues to potential consumers. Instead, an assessment of the effects on non-human living beings has gained importance. The debate has primarily focused on either Nano2Bio or Bio2Nano. According to this distinction, Nano2Bio addresses applications of nanotechnology in the life-sciences, including approaches that contribute to manipulating biological systems by means of new technologies. Bio2Nano, instead,

⁴ For an interpretation of the most basic rights of citizens and the impact on consumption, see [9].

⁵ The debate on the precautionary principle is particularly broad. For a particularly fine-grained debate of uncertainty in the context of nanotechnology, see [10, 11].

⁶ McGinn adds that he borrows the phrase “improving the stewardship of the scientific enterprise” from Douglas Kysar.

discusses applications of biotechnology in order to shape the qualities of technical objects in order to enhance their properties ([14] 37–42). Even though both research areas raise important issues, they focus on applications of nanotechnologies in the lab. Yet, the approaches need to be broadened in order to include natural goods such as the atmosphere, water, and the soil.

This broader approach includes nano-bio-technology as a treatment of plants and living beings [15]. It also includes an assessment of nano-effects in environmental ethics. In this context, authors discuss in which scenarios a strict principle of precaution needs to supplement a rather loose principle [16–20]. Whereas a loose principle focuses more generally on a situation of uncertain risks, a strict principle includes criteria that do not only relate to various degrees of uncertainty but also to the qualities of foreseeable effects [21]. As for effects on nature, the qualities are as important as the probabilities of risks. According to the development of recent theories on constitutional rights, the right to an intact environment plays a new and important role. This coheres with the claim that the safety of consumers needs to be regarded as a core interest; yet the value of natural integrity and robustness also figures as an important ingredient in new trump rights.

Another approach to a more comprehensive assessment that frames precaution is provided by studies that focus on possible high and irreversible risks caused by materials that cannot be contained or even detected after having been released into the environment. In the debate of an ethics of remediation that includes cases as dramatic as the radioactive poisoning of the natural environment, Oughton et al. [22] demonstrate that uncertainty should not be reduced to statistic risk. Instead, uncertainty can also result from the unforeseeable variability of environmental responses to an incident of pollution [22]. Uncertainty also includes differences regarding the reactions of individuals, statistical errors, or data gaps, as well as incomplete knowledge of the expected time-frame of effects. Consequently, uncertainty can be categorized as knowledge uncertainty as well as “variability,” the latter meaning “the natural variability due to the diversity or true heterogeneity in a data set or population” ([22] 1385). In order to develop criteria for responding to the second type of uncertainty, the risks posed by nano-release can—in some distinct respects—be paralleled with the proposal to evaluate the release of particularly harmful materials, such as radioactive

materials, among others. This approach proposes to address the conditions for successful risk-management more comprehensively. In particular, societies assess risk against the backdrop of a range of values, including the values of information, of collective decision procedures, and of confronting risks instead of resettlement [23]. Here again, the approach to a more comprehensive assessment of most basic values effected in nano-release breaks down to a range of trump rights, including the right to information and freedom of choice.

Conclusion

“Safer by design”-strategies try to support the development and production of products that include nano-materials without putting the health and integrity of persons at risk. This paper has argued that in order to evaluate “safer by design”-strategies, it is helpful to look at the other side of the coin, which is the rights of citizens whose realization is supported by safer products. In particular, two prospects are helpful for supporting proactive strategies without focusing on one single value. *Firstly*, in order to outline proactive strategies, it is necessary to go back to a notion of persons as citizens that includes a debate on a range of most basic rights of citizens. The debate on the ethical implications of the concept of a citizen is vast. Yet, some proposals provide guidelines for re-defining prior concerns in framing policies that address basic rights of citizens in constitutional democracy. As for “safer by design,” linking this to the trump right of bodily integrity does not suffice. Instead, it also needs to resonate with other more basic rights, including the right to freedom of choice, the right of access to full information, and the right to self-determination regarding risk-management (for the latter, see the integrated approach by Oughton et al. [22]). Since “safer by design” does not exclusively aim at producing physical structures that provide safety but also at product cycles that aim at more safety, the space for integrating concerns about a broad range of values is there. What is missing so far is an adjustment of lists of constitutional rights to the more concrete scenarios in which nano-safety plays out.

Secondly, it seems as if the most basic concerns today include environmental concerns [24]. Environmental rights are not only among recently argued constitutional rights; they are at the heart of debates on the moral implications of environmental concerns as severe as

climate change [21]. A more comprehensive assessment of proactive strategies regarding nanotechnology needs to explore options not only to reduce risks generated by nano-products. Instead, options to use nano-materials in terms of “environmental cleansing,” perhaps even in terms of “planetary medicine” also need to be taken seriously. Many current proposals for evaluating nano-materials take these tasks already into account [6, 25, 26]. Yet, an investigation of what really counts as a most basic concern in this respect does not only contribute to taking strategies of prevention seriously. It also contributes to listing environmental concerns among the most basic concerns of citizens today.

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