

# The Problem With Problem Solving. Design, Ecology and the Common Good

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In this paper, reflecting on my creative paralysis caused by the Covid-19 pandemic, I want to rethink the capability of design to solve problems, which is usually associated with its ability to contribute to the common good. Critically questioning modern conceptualizations of design as fundamental human activity that intertwines us with our environment I will highlight that it's not so much the problems solved that make design meaningful, but the differences it creates. Differences, that some would consider small and superficial. Even in the face of impending climate catastrophe, an understanding of the common good by design must be defended as debatable. More radical and far reaching contemporary conceptualisations of design – such as ontological design – will be the counter position from which this paper develops a different understanding of design's capabilities. Facing this crisis difference beyond novelty is not much, but it might be all that design has to offer.

## 1 Introduction

We live in times of crisis. Which is not an unusual statement for a human being at any given point in time. Just imagine the horrors of untamed nature, the mastery of which had determined the whole history of mankind culminating in modernity. Human cooperation has led us out of nature's chaos and into a continual process of collective self-improvement. Even though the multiple crises that were caused by the Coronavirus paralyzed this progress, designers–me included–still held onto that unbounded optimism that seeks the opportunity in every crisis. Following our mantra of world improvement, we continued to look for ways to make the world a better place. As true philanthropists we continued to look for problems that still can be solved in the name of the common good. For a second let's imagine that our struggle can be properly celebrated again after this long winter in adequate form: with a (design) festival for and by the people. No one described this better than the Genevan political philosopher Jean-Jacques Rousseau:

“Plant a stake crowned with flowers in the middle of the square; gather the people together there, and you will have a festival. Do better yet; let the spectators become an entertainment to themselves; make them actors themselves; do it so, that each sees and loves himself in the others so that all will be better united.” (Rousseau, 1960, p.126).

Why do I bring this up? What does this festival have to do with design–other than its setup and the military uniforms that the (male) citizens wear, which Rousseau describes. Because this festival isn't just a leisure activity for Rousseau, the theorist of the common good. The Genevan festival gathers together a community that is transparent to itself in that everyone is at the same time an individual and a universal citizen and found 'in his place'. The festival, therefore, is to be a spectacle in which the community and the republic “is not represented but presented”, thus also presenting the social order, as everyone demonstrates the place where they belong (Rebentisch, 2016, p.199). It is, so to speak, a manifestation of Rousseau's understanding of the general will, a striking materialization – a design – of the common good.

It's not surprising that if one looks close enough at Rousseau's concept of the common good one is to find many similarities with common conceptions of design as a problem-solving activity. Modernist design is, after all, a product of modernity, a child of the enlightenment that was set in motion by Rousseau, among others: modern ideas materialized in form. So, before I come directly to the concept of problem solving through design, I want to summarize some key points of Rousseau's concept that bear particular similarity and therefore significance to the concept of designer as problem solver in this short introduction. After framing the paradox of the definition of the common good from an enlightenment perspective, I will turn to two modernist understandings of design, each of which

attempted to define design as a problem-solving activity in a different way. But let's first see what Rousseau has to say.

It is fascinating how Rousseau equates government with collective self-government among equals, thus giving the ethical question of self-government immediate political relevance. Politics and ethics cannot be separated, and they must not be disturbed by aestheticization at any cost. For this would be the downfall of civilization, marked by effeminate men that are concerned with appearances, recognition and only know amour-propre, self-love or pride. (Rousseau, 1994, p.134f) Men who in their particular wills have lost sight of the general will of the common good. Rousseau stresses that while any sum total of each individual's desires remains particular, the general will, that is supposed to be present in the Genevan spectacle, is the one will "which tends always to the conservation and well-being of the whole" (Rousseau, 1999, 7). Political authority, to Rousseau, should be understood as legitimate only if it exists according to the general will that is manifest in the constitution. As it was written to voice the general will of the sovereign, beginning with: "We the people [...]". The pursuit of the common good, then, enables the state to act as a moral community, again linking ethics with politics.

But who defines this common good, that the state is supposed to work in accordance with? Who is this 'we' that is supposedly speaking? Before the constitution of a state who is able to define this common good, that's supposed to manifest itself as the general will in the constitution? Here Rousseau runs into the paradox of the legislator. The ones who write the constitution for the people in the name of the people—the ones who design it—would have to be at least enlightened philanthropists. They already have to have identified from their particular perspective the common good of the general will to write a constitution in accordance with it.

This paradox is still paralleled in design today. In designing for the common good how do we identify what's best for all? Certainly not by asking everyone, because this would only give us the sum of all particular wills and not the general will of the common good. Rousseau 'solves' this 'problem' by delegating it to a higher authority: the divine. The legislator is writing the law in the name of the people manifesting god's will. 200 years after his influential texts on the Social Contract we're still trying to delegate this problem to higher authorities, whichever they may be, and fear the perils of aestheticization. I now want to take on those questions that the paradox of the legislator poses in regard to design.

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I will now turn to two positions, each of which attempted to define design as a problem-solving activity in a different way. This modern problem-solving paradigm, which gained influence especially since the 1960s, needs to be looked at more closely to under-

## 2 Problem Solving

stand its perpetuation in a designerly optimism – my own designerly optimism – that seeks opportunity in every crisis and dreams of saving the world, as stated in the beginning. Because this is what designers do after all, isn't it? Solving problems and making the world a better place: a "course of action aimed at changing existing situations into preferred ones" (Simon, 1996, p.111) as one of the pioneers in artificial intelligence and design methodology Herbert A. Simon put it in his 1969 work *The Science of the Artificial*. He elaborates his very broad understanding of design as part of a science of the artificial, "[that] is concerned with how things ought to be, with devising artifacts to attain goals," (ibid., p.4) as opposed to the sciences of the natural, "[that] are concerned with how things are" (ibid., p.114). Simon sees the necessity of this differentiation in the madeness of the human environment, which has already become a completely artificial one. Therefore, his science of design as a science of the artificial is in fact a science of the social. In this perspective of social optimization, designers act and judge in a space of possibilities in which they compare a necessarily limited number of different potential worlds that could result from their intervening design decisions in order to select the best one.

Because design makes things the way they should be in the future as solved problems, it needs a standard of evaluation. However, Simon rejects moral standards. In his opinion design should be about the knowledge-based selection of appropriate parameters and variables whose interaction in a kind of compromise would promise the best result. Consequently, the science of design is about how to make this optimization process itself as optimal and efficient as possible: "There is no question [...] of the design process hiding behind the cloak of 'judgment' or 'experience'" (ibid., p.135). Aesthetics and morals are out.

The problem with this understanding of design as an activity that rationally solves problems and optimizes the world is the exclusion of ethical issues, which for Simon are irrelevant in the pure comparison of variables. The higher power that he delegates the decision over the common good to is the algorithm.

But according to Claudia Mareis' critique of Simon's understanding of design, it is itself a problem to understand the reality of life as a design problem to be solved (2011, p.139). A critique I must add, that has become even more relevant in times of the quantifiable personas of data driven self-optimization. From this scientific perspective, as represented by Simon, all disorder of reality can ultimately be transformed into an artificial as well as rational order of design, which resists chaos due to its meticulous planning. For Mareis however, this creative, ordering perspective on the chaos of the world is a reaction to the increasing complexity of society. At the same time, this understanding of design reveals the design optimism and belief in progress that had not yet reached

such a crisis in Simon's time. Because reading Simon's famous definition of design half a century later, with the earth's temperature increased by almost 1°C and a pandemic spreading across the globe, this modern utopia of endless progress and constant optimization feels hollow.

### 3 Wicked Problems and Entangled Objects

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But for now, let's focus on these modern heydays of planning theory and its mantra of ongoing world and self-improvement. A contemporary of Herbert Simon put forward another outlook on design, that is still engaged in this scientific and rational approach but one that characterized problems very differently. In a paper that was published in 1970, the design theorist Horst Rittel defines design problems as complicated, complex, almost unsolvable: "wicked" (1973, p.XX). He described a total of ten characteristics of those "wicked problems", among which are that these problems can never be conclusively determined, that every attempt to describe the problem already provides a specific solution, that they never stop evolving, that they are usually merely symptoms of a deeper problem, and that their solutions cannot function in the rational categories of "right" or "wrong" (ibid., p.161-167). Therefore, designers and planners are responsible for the mistakes they make when 'solving' these problems. This gives design an inevitable moral dimension, an imperative for communication and debate, one that Simon neglected. Reading Rittel's definition of a wicked problem one is immediately reminded of the current challenges that the design discipline faces. Operating on a systemic level, 'solving' problems while enframing the possible actions of our everyday lives, design plays an immense role in creating these problems in the first place. E-mobility, for example, might solve the problem of greenhouse gas emission. But a recent study highlighted that higher demand for batteries will also increase the mining for minerals and rare metals required for those batteries (Wehrspohn, 2017). Those unintended consequences of design are what make these problems 'wicked' and therefore any easy solution impossible.

Even though Rittel's approach conceives problems and designer's capability to solve them in a more complex way, including moral decisions and debate, his understanding remains one of design as a problem-solving activity, in which, like Simon's science of the artificial, he expands the concept of design immensely and extends it to countless, mostly intellectual activities: like law making-writing a constitution in the name of the common good. Although the very definition of the problem is supposed to be a problem, any problem definition according to Rittel, even a wicked one, automatically provides the basis for a possible solution. Design keeps being trapped in the teleological structure of problems and solutions. Despite his insistence on the ethical dimension of all planning, and despite Simon's approach of thinking in terms of possibilities, the optimization of the society as a whole through planning and design ultimately remains the goal of both modern approaches. But much

more fundamental – apart from a positivist and technophile tone of these approaches connoted as 'masculine', as again Claudia Mareis rightfully points out (Mareis, 2011, p.151) – is the problem of speaking of problems in design at all and thus always suggesting their possible solution (Dorst, 2006). But what if the supposed goal of all design isn't that clear after all? What if design never solved any problem but made things more complicated? And finally, what if that's a good thing? So, let's forget about the problems but keep the wickedness that made design a complicated moral endeavour.

Almost fifty years and several environmental crises after Rittel's definition, the separation between a definable problem, the one who defines it, and a rational and objective solution is dwindling. Facing today's multiple crises, we also have to ask ourselves if the definition of a common good can remain solely focused on the realm of humans or if our interdependencies don't require us to broaden this concept. Bruno Latour's Actor-Network-Theory recently received considerable attention in design theory as a new way to understand the interaction between us humans and our designed environment as well as other non-human entities as co-actors (Latour, 1996). To rethink design's problem-solving capability one of Latour's controversial suggestions might enable us to see through the modern teleological conception of problem/solution, especially regarding the environmental crisis. It's a simple yet complicated demand: we have to get rid of the division between nature and politics! In *Politics of Nature* Latour argues that this division has been fortified especially by those who claim to protect nature. But 'protecting nature' insinuates that her crisis could be objectively analysed and that her problems are a matter of fact, that can be analysed by experts only, that demand only one possible solution. Thus, politics are negated by environmentalists and their scientific experts. They claim to know the only solution to a clear definable problem-like Rousseau's legislator they very clearly see a post-human common good for all – and thus there's nothing that needs to be debated. Latour pleads that precisely those supposedly purely objective problems that present themselves as unchangeable "matters of fact" and can thus only be solved by experts, must be turned into "matters of concern" that affect us all (Latour, 2004, p.22). The supposed crisis of nature that political ecologists proclaim is not a crisis of nature as separate from the political debate but a "crisis of objectivity" (ibid.). This controversial shift and the dissolution of the division between nature and politics as well as between subject and object has implications for the definition of design as a problem-solving activity as well. The "risk-free objects, the smooth objects to which we had been accustomed up to now, are giving way to risky attachments, tangled objects" (ibid.). Tangled objects that make their producers appear in broad daylight as "complicated, implicated, with all their instruments, laboratories, workshops, and factories" (ibid., p.24).

In his description of design Latour emphasizes its special characteristics, for example its process character: "to design is always to redesign. There is always something that exists first as a given, as an issue, as a problem" (Latour, 2011, p.154). So, design does not solve problems, but re-designs them as tangled objects. Latour's tangled objects free Rittel's definition of the wicked problem of its teleological structure and open them up to a new form of politics entangled with nature and objects: "Dingpolitik", as Latour calls it referring to Martin Heidegger (Latour, Weibel, 2005, p.23). A thing is a tangled object, a wicked problem, a matter of concern that causes division and at the same time assembles us around it. They are the tangled objects, the amalgamation of nature and politics in an "object-oriented democracy" (ibid., p.16). In this reformulation, problems, even wicked ones, are never really solved, but rather re-defined, negotiated, and iteratively transformed. Ambitious designers become entangled in them through the design process itself. In the worst case, which is by no means the least uncommon, problems become even more entangled and are perpetuated. The focus in Herbert A. Simon's famous definition of design as an activity that can change an existing situation into a preferred one must be shifted from the result (the preferred situation) to the process (the changing), the difference, if one wants to define design as elementarily dependent on the evaluation of many as Horst Rittel highlighted.

#### 4 Design as Politics

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So far, we rid design of its focus on solving problems and discovered an entangled wickedness, that fuses the artificial and the natural and calls for a new form of politics, a new way to unite us over what divides us. But is this enough to tackle the unfolding environmental crisis? Is this all that design can do? At one point Latour is even tempted to replace the concept of revolution with that of design (Latour, 2011, p.155). Building on Heidegger's definition of the thing and its ontological "thinging" design theorist Tony Fry takes a decisive step further and turns design in Design as Politics into politics (2011). Facing the age of unsettlement that will be caused by the climate crisis and rising sea levels design finally has to step up. Fry more radically calls for a politicization of design, whereby design should itself become politics through the "ontological" transformations it can bring about, the way we become human by design: "Design as worlding (world-making) is ecologically and ontologically transformative" (ibid., p.234). To secure the future of the planet facing the ecological catastrophe, design has to be moved "out of its economic function and into a political frame", it has to become a "redirective practice" in its capacity and finally an endeavour of enabling the future, of "futuring" (ibid., vii).

Until now, however, all design has played a decisive role in the unsustainability of the overall system conceived by the Enlightenment, modernity and – if you will – Rousseau. Design created the problem that looms outside my window. The global capitalistic and

exploitative setting systematically destroys any possible future for humans and non-humans alike. It is, therefore, a force of "defuturing". This system has to be destroyed and we as humanity have to redesign ourselves by redesigning the things that surround us. This radical redesign encompasses this new form of design-politics: the ontological designed "dictatorship of sustainment" (ibid., p.131). This is brought about "by the design of things (material and socio-political) rather than by force", Fry argues. "Our 'becoming otherwise' is a matter of ontological change. It is a question of changing the ways things are" (ibid., pp.110-111).

The fundamental change by design as well as the dictatorship of sustainment, however, is not one of unfreedom, not a "grey regime of authoritarian uniformity" (ibid). The dictatorship of sustainment alone is the basis on which there can be real difference and not merely a false liberal pluralism that would prevent real difference by neutralizing it through commodification, economic exclusion, or violence justified by national security. Likewise, it must be clear that there will be limits and boundaries to production and design but: "these would be based on empirically confirmed common interests" (ibid., p.214). The 'futuring' of the ontologically designed 'dictatorship of sustainment' would be a more radical form of politics, a more consistent decision-making, than the current deliberative democracy would allow. However, this is still based on decisions in the spirit of the common good, as long as these are within the framework of sustainability. This dictatorship through design would again be a dictatorship of true design philanthropists and invisible experts.

Recent political events, as well as the continuing resistance of climate sceptics who invoke the plurality of differing opinions on this issue, seem to support the importance of Fry's radical call for design as politics. Only radical change and ontological design seem to be able to prevent this radical crisis from turning into a disaster. But who are the ones to decide the radical course of action? Who are the invisible experts, that will dictate design as politics? The concept of a designed dictatorship of sustainment contains all the megalomania that designers are capable of. Fry's proposal to finally overcome modernity, which he accuses of a totalization of all areas of life, unsustainability, and a creative impetus of boundless growth and boundless (superficial) design, falls short of his own criticism when he wants to replace the modern totalitarianism with a new, sustainable one. 'Sustainment' and 'Enlightenment' are not as different as Fry wants us to believe. We would switch from one essentialist understanding of design to another. In the end, what's eliminated is any debate about what's to be done. Design as politics eliminates politics.

So, what do we do now? I am again sitting in my room staring out the window and in the days that this paper took to write the situation of our planet has probably gotten worse. It has probably gotten worse to the time you are reading this. There's no great festival to be found anywhere. Not a single problem has been solved and I doubt that design was ever able to do that in the first place. Still, I won't let go of the optimism I feel towards designs' inherent potentials. But they are very different from what Fry imagines them to be. We have to think of design differently. Design won't fundamentally change the world. But it doesn't have to. In design, we are neither dealing with a process of neutral problem solving nor with a construction of human nature, that always changes society as a whole. Designing is a decision-making process. Particular, contingent decisions, that demonstrate the possibility of being otherwise. Design is the stage on which meaningful differences can appear and questions about the conditions of our living environment can be negotiated. We have to acknowledge the aesthetic dimension of design if we want to conceptualize a debatable design for the common good. We have to defend design's artificiality against any essentialist understanding of design, in which everything is predetermined, and nothing has to be debated anymore. In its character as a proposal to which there must always be alternatives lies the special potential of design. Design persuasively shows us that things could be otherwise—in many different ways. Its world-making potential is one of many different worlds, a pluriversal one (Escobar, 2018). Like the philosopher Juliane Rebenitsch highlights in regard to the paradox of the legislator that Rousseau faces, "the general will [...] turns out to be the fiction of the legislator. It exists [...] only in and by virtue of the performative momentum of its representation" (Rebenitsch, 213). In reference to Jacques Derrida Rebenitsch emphasizes the rhetoric, public and aesthetic dimension of any speech act that submits itself to the laws of giving reason(s). This is not like Tony Fry would have it a weakness of democracy however, but it's strength:

"The antidote to [...] and irreducible presumption of authority at the founding moment [...] of democratic societies, consist not in denying this presumption, but in staging it publicly." (Ibid.)

Democratic Societies are "theatrocracies" by nature, meaning that politics and ethics cannot be separated from an aesthetic dimension, for "a democracy that has become immune to the aestheticizing transformation of its own ethical-political self-understanding would no longer be a democracy" (Rebenitsch, 2016, p.259).

In the end, what role remains for design to avert the impending climate catastrophe? Especially climate sceptics and reactionary forces seem to play out the crisis of objectivity in a fabulous way. But what they are missing is a fundamental relationality that Latour describes. After all, climate change sceptics don't articulate their

scepticism as a contribution to an open discussion, but rather as a way of preventing any debate by trivializing their opponents. In doing so, their alternative facts want to remove themselves from any contestation or dispute and to eliminate the relationality of truth-finding altogether. In defending a definition of the common good that is debatable and staged by design, design needs to do the opposite. It needs to articulate different proposals and make a new world seem possible—not enforce it. Because our being human is being together with others, connecting and communicating is design's primary task. Like the pioneer of product language Jochen Gros put it: If the "material basis of society changes - as is currently the case due to the ecological crisis - then not only the opportunity but even the necessity arises" for design to formulate new proposals and to bring significant and effective differences to the public and society (Gros, 1974).

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