There is no objective world with freedom and democracy and rational thought. We have designed such a world, and we must continue to design it if we want it to continue to persist.

It was from Russell that logicians and scientists began to learn that definitions can be performative. By declaring the existence of the Russell Set – by declaring the existence of all sets that are not members of themselves – one brings into existence a new set, the Russell set itself. And the Russell set must also be decided with regard to its fitting with the concept. The importance of this construction of Russell is that performance and reflexivity entered into the logical discourse itself. That entrance has not been fully appreciated by scientists or politicians or those who would understand the nature of construction through language in society.

Russell's "set of all sets that are not members of themselves"[3] was a wrench that unlocked the unwritten assumption that ideal entities could be constructed without contradiction and that truth could be a purely linguistic construction. When a person speaks and declares the existence of entities, such as countries, political parties, groups that are conservative or socialist or scientific, he brings to the table the entire gamut of ideas and concepts that he has for these groupings, and in his act of speaking creates the collections whereof he speaks. If his speech is not in accord with some others' "facts," it is nevertheless the case that he brings forth a construction that will be used and continued forward by others. Russell showed that such problematical constructions could occur in the most rarefied instances. We see that reflexive constructions of this kind – contradictory or not contradictory in their logical and factual content – are produced every day by persons in the public domain. Each such construction is a design, and it is a design that is intended to be used by the persons to whom the performance is addressed. We can no longer assume that only speaking logically will create and describe an already given objective world. The world is created and designed through our speech.

We have not yet recovered from the implications of Russell's observations. Politicians make their living by ignoring facts (such as they may be) and making declarations that are intended to bring forth a point of view as if real.

The designer, who sees what Russell did, knows the power and the limitation of declarative language. We have to be conscious of process. Otherwise, the unscrupulous become the designers.

Each must take design of his world and his relation to his world as his own and know and practice the process. This is my summary and fundamental agreement with the article of Michael Lissack.

1 Michael Lissack, "Understanding Is a Design Problem: Cognizing from a Designerly Thinking Perspective. Part 1," *She Ji: The Journal of Design, Economics, and Innovation* 5, no. 3 (2019): 244, DOI: https://doi.org/10.1016/j.sheji.2019.07.002.

2 I will refer to the designer in the masculine tense. This is for convenience only.

3 Bertrand Russell, *Introduction to Mathematical Philosophy* (London: George Allen and Unwin Ltd, and New York: The Macmillan Co., 1919), 136; see also Bertrand Russell, "Letter to Frege," in *From Frege to Gödel: A Source Book in Mathematical Logic, 1879–1932*, ed. Jean van Hijenhoort (Cambridge, MA: Harvard University Press, 1967), 124–25; and Gottlob Frege, "Letter to Russell," in *From Frege to Gödel: A Source Book in Mathematical Logic, 1879–1932*, ed. Jean van Hijenhoort (Cambridge, MA: Harvard University Press, 1967), 126–28.

What Design Can't Do

Kees Dorst, Faculty of Transdisciplinary Innovation, University of Technology Sydney, Australia

Kees.Dorst@uts.edu.au

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Abstract This is a commentary on Michael Lissack's two-part article "Understanding is a Design Problem: Cognizing from a Designerly Thinking Perspective." In the commentary, I investigate Lissack's thesis that designerly thinking can be used as a pathway to understand the cultural and political world at large. From a design perspective, his thesis is problematic, as design thinking in itself doesn't have the systematic checks and balances needed for achieving such a critical understanding. One could even argue that design thinking is one of the modes of reasoning that leads to conspiracy theories.

Keywords Design Thinking; induction; understanding

Designerly thinking can be used to understand the man-made world. Through close observation and reverse designing, we can infer the intent and decisions behind the world of things, systems, services, and interactions that surrounds us. We construct this

understanding through induction – the creation of hypotheses proposing why things might be made the way they are. These are then checked in an iterative learning process that gradually moves from tentative proposition to a feeling of certainty and knowledge. This is a key part of design expertise: by considering the world in this way we learn not to take anything for granted, raise new questions and empower ourselves to change it.[1]

In his articles,[2] Michael Lissack goes one step further, by proposing that designerly thinking should be used by all of us citizens as a pathway to understanding the broader cultural and political world at large. He argues that designerly thinking – with its iterative process of arriving at a conclusion, its emphasis on agency, and its naturally pragmatic outlook – is just what we need to build understanding in these times. In these two articles, he explores this thesis from a cybernetics perspective. This brief reflective paper is our opportunity to explore his thesis from a design perspective, to see where the two can meet.

In considering the creation of understanding from a design perspective, two fundamental points of difference between design and the creation of understanding stand out:

- Understanding the political and cultural world trumps the complexity that conventional design deals with, and this requires a thoroughness and a systematic thinking that goes beyond the needs of normal design practice. Design tends to be pragmatic, to the point of being opportunistic – so experiments in a design context tend to be situated and formative (trying to make something that works) rather than systematic and critical (trying to break things so we gain knowledge).
- Most importantly, the design way to reaching understanding (the "reverse designing" I referred to earlier) presupposes deliberate intent, causality, and (implicitly) the existence of an actor that has the intent. When those are not in clear view, making sense in a designerly way easily leads one down the path of creating them out of thin air. But it is an absolute fallacy to look for a prime mover for causality and intent where there might be none. This is a natural human tendency. We do not like to think of important events as a matter of chance or (bad) luck, and will try to make sense of them.

The latter point is important in the context of Lissack's central thesis: the wrongful presumption of intent, causality, and the existence of an actor easily leads down the path to conspiracy theories – exactly the kind of theory he seeks to avoid through designerly thinking. Yet conspiracy theories ARE designs: they are the results of designerly thinking processes in which a causality, a (maleficent) actor, and questionable intent are created to make sense of a phenomenon. A good conspiracy theory is a proposition that makes all phenomena in the situation under consideration fit together nicely and suggestively, and leaves nothing to chance. It is a clever, well-integrated design.

This is the dangerous, dark side of creative practice – every creative design implies an understanding of the way the world works, every design project includes the construction of a mental model. In professional design practice, using product design as an example, there are two critical mechanisms that keep the designer's feet on the ground: (1) the mere fact that product designs have to be realized means they have to really work in the physical world (you can't talk your way out of an obvious failure); and (2) the fact that within a design project there is a client that forces designers to defend their decisions, and who keeps questioning designers' assumptions, including the original assumptions as well as the ones that might creep into the developing design concept during the design process. Please note that these two crucial feedback mechanisms are external: they come from outside the designer's thinking and design activity itself. Design practice in itself doesn't seem to have any well-developed internal mechanisms for this.

Unfortunately, in the broader cultural and political world that Lissack considers, these external mechanisms do not exist – there is no hard reality to create the feedback loop, and there is no external client that calls out the assumptions behind the thinking. This should set off some pretty loud alarm bells: can design thinking be safely used in their absence?

In the second paper, Lissack proposes that there are five practices that design can bring to the critical creation of understanding in the cultural and sociopolitical domain. These are listed as (1) modelling, (2) choosing a focus, (3) selecting among adjacent possibles, (4) priming the context, and (5) highlighting/suppressing questions. There are reasons to doubt that design can deliver on these promises.

As mentioned above, designers are quite intuitive, nonsystematic, opportunistic, and sometimes inconsistent in the ways they deal with abstraction, and hence in their creation and use of models. This is problematic, especially in complex problem environments. Lissack rightly states that designers are used

to iteration – and they have to be, working in an environment with too many unknowns, where progress is created through learning your way to a solution. Yet this tends to be an ability that is built up over years of attaining design expertise; design literature has very little to offer in terms of methods and tools to achieve a good, and valid, iteration. Priming is a key design skill, but this too tends to be an intuitive ability, built up over years of design of experience. Design doesn't have a systematic way of collecting, accessing, and critically dealing with precedents, which would be needed to deliberately prime attention. And finally, designers are not particularly good at questioning – on the contrary, all but the most expert designers are quite vulnerable to jumping to conclusions. These five qualities of design do not aid in the systematic and critical questioning of assumptions, and they do not make up a safe designerly process to avoid conspiracy theories.

Conclusion

We find ourselves in a tangled web of voices, opinions, and disingenuous half-truths, and urgently need to find new ways of creating a critical understanding of the world. Lissack is absolutely right in highlighting that inductive understanding and design are closely related, perhaps closer than designers realize. But I hope I have demonstrated that this is problematic, as design thinking is one of the modes of reasoning that actually leads to conspiracy theories.

As design and design literature exist today, the field doesn't have the practices, methods, and tools to safely support the creation of understanding – although this could be shifting: the learning that has always driven design projects is now being formalized, extended, and systematized in Research through Design,[3] Academic Design,[4] and other methodologies. The growing literature on Design as Rhetoric is starting to ameliorate this situation,[5] but as of yet this has led to few methods and tools in the design repertoire.

The real solution to the challenge that Lissack has posed lies in the work that he has set out to do in this paper: by thoughtfully taking the key concepts from design and abstracting them, designerly ways of thinking can be linked to critical practices, methods, and tools from other fields. These can then be used to strengthen and enrich the design repertoire. Iterative design processes can play host to the types of critical thinking practices that are needed to safely build up understanding in a complex world. We need bridge-builders (such as cyberneticists) to create links into other fields and enhance what design can do.

1 Kees Dorst, *Notes on Design: How Creative Practice Works* (Amsterdam: BIS publishers, 2007), 90.

2 Michael Lissack, "Understanding Is a Design Problem: Cognizing from a Designerly Thinking Perspective. Part 1," *She Ji: The Journal of Design, Economics, and Innovation* 5, no. 3 (2019): 231–46, DOI: https://doi.org/10.1016/j.sheji.2019.07.002; Michael Lissack, "Understanding Is a Design Problem: Cognizing from a Designerly Thinking Perspective. Part 2," *She Ji: The Journal of Design, Economics, and Innovation* 5, no. 4 (2019): 327–42, DOI: https://doi.org/10.1016/j.sheji.2019.11.019.

3 Pieter Stappers and Elisa Giaccardi, "Research through Design," in *The Encyclopedia of Human-Computer Interaction*, 2nd ed. (Interaction Design Foundation, 2017), article 43, available at https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed/research-through-design.

4 Ilpo K. Koskinen and Kees Dorst, "Academic Design," in DS 80-11 *Proceedings of the 20th International Conference on Engineering Design* (ICED 15) Vol 11: Human Behaviour in Design, Design Education (Milan, Italy, July 27–30, 2015), 227–34, available at https://www.designsociety.org/publication/38015/ACADEMIC+DESIGN.

5 Richard Buchanan, "Design and the New Rhetoric: Productive Arts in the Philosophy of Culture," *Philosophy & Rhetoric* 34, no. 3 (2001):183–206, available at https://www.jstor.org/stable/40238091.

Second Order Cybernetics: Why and Where to Steer To

Michael Hohl, Anhalt University of Applied Sciences, School of Design, Dessau, Germany

michael.hohl@hs-anhalt.de

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Abstract This is a commentary on Michael Lissack's two-part article "Understanding is a Design Problem: Cognizing from a Designerly Thinking Perspective." In response to the two-part article this short commentary argues, among others, that there is no possible 'whole' perspective upon the world but only different perspectives held by different observers. It then discusses some aspects of the relationship between the design process and second-order cybernetics, applying an example of designerly practice to discuss the "double-diamond model" of the design process, and to demonstrate where first-order cybernetics thinking and where second-order cybernetics' thinking might come into play. This is followed by the argument that designers design not purely in their minds and observe changes in the reacting world – but that instead