Jun 25th, 9:00 AM

Pragmatism, design and public sector innovation: Reflections on action

Rodger Watson
University of Technology Sydney, Australia

Kees Dorst
University of Technology Sydney, Australia

Citation

Watson, R., and Dorst, K. (2022) Pragmatism, design and public sector innovation: Reflections on action, in Lockton, D., Lenzi, S., Hekkert, P., Oak, A., Sádaba, J., Lloyd, P. (eds.), *DRS2022: Bilbao*, 25 June - 3 July, Bilbao, Spain. https://doi.org/10.21606/drs.2022.778

DRS 2022
Bilbao 25th June — 3rd July

Pragmatism, design and public sector innovation: Reflections on action

Rodger Watson[a]*, Kees Dorst[a]

University of Technology Sydney, Australia

*corresponding e-mail: rodger.watson@uts.edu.au

doi.org/10.21606/drs.2022.778

Abstract: This reflective paper explores the intersection of Pragmatism, Design Research and Public Sector Innovation through the lens of a body of work undertaken at a public sector innovation, design research center between 2010-2018. This center drew explicitly on the work of Donald Schön and Charles Sanders Peirce in the development of its research methodology and practice. The paper includes an illustrative case study that demonstrates the application of Peirce's model of Innovative Abduction, draws on recent interview data that demonstrates engagement with Deweyan Analysis of Reflective Thinking and reflects on the possibilities that may come from further engagement with the Pragmatist movement.

Keywords: Pragmatism, Public Sector Innovation, Frame Creation

1. Introduction

In this paper we reflect on the work of the Designing Out Crime Research Centre at the University of Technology Sydney (DOC), and zoom into the Frame Creation approach (Dorst, 2015) that was developed into the Designing for the common good practice (Dorst, *et al.*, 2016). From this reflection on a practice, we engage with the Pragmatist movement and reflect on its influence (both explicit and implicit) on the practice developed by the DOC research centre.

The DOC research centre was founded with an ambitious mandate; to create a way of working with complex societal issues (crime) that drew on practice beyond the dominant paradigm (criminology). The centre was founded on the promise that design was about more than just the embodied artifact/product and that Design offered a way of engaging with complex issues.

Founded from the justice sector, the establishment of DOC was a call to action to the university sector to engage in a practical, formative, and constructive way. In essence DOC was response to the paradoxical tension that was dominant within crime prevention theory and

practice. This paradoxical tension comes from the "evidence-based" practice of Situational Crime Prevention (for example see Cornish and Clarke, 2003), and the positioning of design as form, rather than a way of thinking (Asquith *et al*., 2013).

Hosted in a Design school, and staffed by people from a range of disciplines (Industrial Design, Criminology, Architecture, Psychology, History, Urban Planning, and over time, many more), the staff were tasked with creating a way to work together, and to use this way of working to engage with diverse stakeholders to develop interventions into complex societal issues.

As a newly formed team, Donald Schön's work gave the DOC people a way of engaging with Frame Creation. Where Frame Creation came from research into how celebrated creative thinkers took on complex challenges, the DOC people were tasked with forming a way of taking those insights into practice within complex societal issues.

With this foregrounding in mind, this paper attempts to make some sense of the many elements so far introduced. Dixon's (2020) exploration of Pragmatism from a Design Research lens provides an excellent platform for further engagement from Design Research into Pragmatism. In this paper we focus on aspects of Pierce, James, and Dewey that were most influential to the practice of the research centre. We draw on a research case study which facilitated practitioners through an innovative abduction thought process, and a research interview with a senior leader. Both research pieces are from a broader body of work and are drawn on here to contribute to the quest for a pragmatist epistemology of practice.

2. The research centre, Schön, and pragmatism

The founding Pragmatists were themselves leading practitioners and theorists in their fields. In engaging with the Pragmatists in this way we can learn from them as theorists, practitioners in their own fields, and through practical application of the methods developed to embody pragmatist principles.

In order to create a space (physical and conceptual) where multiple stakeholders could collaboratively engage in abductive innovation, the research centre developed and trialled tools to facilitate the necessary conceptual leaps. A detailed description of these tools and a number of case studies are the subject of Designing for the common good (Dorst, *et al*., 2016).

2.1 Key Pragmatism principles in the development of the practice

In the development of the designing for the common good practice it was immensely useful to engage in an exploration of the current state of an issue. Developing an understanding of how the issue at hand had been approached was an important, and cathartic first step. This both draws on Schön's reflection in action (1983) in the naming and framing stages of his model, and Roozenburg and Eekels' (1995) development of Peirce's Innovative Abduction. This exploration of Peirce's notion of abduction, puts forward three equations of logic; deduction, induction, and abduction, where:

> "Deduction is the inference of a result from a rule and a case…
>
> Induction is the inference of a rule from a case and a result…
>
> Abduction is the inference of a case from a rule and a result…"

Roozenburg and Eekels went further to clarify Abduction, proposing that Peirce's Innovative Abduction is distinct from Explanatory Abduction. In Explanatory Abduction, both the second (rule) and third (result) variables are known, the first (case) variable is determined through the thinker's experience with the rule.

> Explanatory Abduction is the inference of a case from a (known) rule and a (known, desired) result.

In Innovative Abduction both the first (case) and second (rule) variables are undetermined at the beginning and are generated through "an act of insight, although of extremely fallible insight" (Peirce, cited in Roozenburg and Eekels, 1995).

> Innovative Abduction is the inference of both rule and a case to achieve a (known, desired) result.

Or as Dorst puts forward;

> "*Deduction – solid reasoning from cause to effect…*
> **WHAT** + **HOW** leads to **???**
>
> *Induction - discovering patterns…*
> **WHAT + ???** leads to **OUTCOME**
>
> *Normal abduction – solid problem solving based on experience*
> **??? + HOW** leads to **OUTCOME**
>
> *Design abduction – two unknowns lead to a process of creative exploration*
>
> **??? + ???** leads to **OUTCOME**" (Dorst, 2015, pp 46-49)

It was often at this point in the unveiling/co-exploration of the Frame Creation model that research partners began to appreciate the distinct difference that the Designing for the common good practice had to offer. While of course Innovative/Design Abduction is not unique to Design, Innovative Design or 'original' design (Roozenburg and Eekels, 1995) embodies Innovative/Design Abduction.

As the above section elucidates the thinking that was at play in the Designing for the common good practice, there are now several Pragmatist principles that deserve to be looked at retrospectively. All of the below principles are conceptually familiar as playing out in the Designing for the common good practice, however not all of them were consciously drawn from Pragmatism.

Charles Sanders Peirce: Having already engaged with Peirce's logic through Roozenburg and Eekels (1995) and Dorst (2015), the next most useful concept was from his work on *Fixation of Belief* (Peirce, 1934) where four ways to resolve doubt are put forward. Paraphrased from the original text below:

1. Tenacity; taking a particular view and holding to it tightly, being open to what we would call confirmation bias, and rejecting any contrary evidence.
2. Authority; A doctrinal approach where institution(s) hold the 'truth' and reinforce the 'truth' through education, repetition, and suppression of alternative views
3. Agreeableness to reason; being convinced of a 'truth' through a reasoned argument, even in the absence of collaborating facts, or even in the presence contrary evidence
4. Science; settling doubt through the application of a methodical exploration. Dewey (1910) later builds on this to put forward his work on Critical Thinking where reflective thought follows a 'scientific' method

In the various research projects undertaken in the development and the application of the practice the researchers engaged with a broad range of participants, with a broad range of perspectives. At times there were competing interests, and strongly held views. The role of authority was often present. In order to move past tenacity, authority, and agreeableness (each of which lend themselves to remaining in the present frame) the participants were inviting into an approach that was both openly described, unfamiliar, and custom made for their kind of complex situation. Innovative Abduction was made explicitly part of the process, with participants invited to suspend judgement and engage with the process. It was this setting which often allowed people to open up to the potential of a different way of approaching their issue.

William James: In many of the research projects undertaken at the DOC research centre, people from diverse backgrounds and organisations were convened to explore complex societal issues. There were often situations where different perspectives had been at play within the stakeholder group, and these perspectives formed paradoxes. James characterised the paradoxical perspectives so:

> "Tender-Minded: Rationalistic (going by 'principles'), Intellectualistic, Idealistic, Optimistic, Religious, Free-willist, Monistic, Dogmatical.
>
> Tough-minded: Empiricist (going by 'facts'), Sensationalistic, Materialistic, Pessimistic, Irreligious, Fatalistic, Pluralistic, Sceptical." (James, 1928)

John Dewey: Dewey builds on Peirce's notion of dispelling doubt through the introduction of his notion of Reflective Thinking, which can be seen as an embodiment of Peirce's scientific thinking. Where one thought is a "*con*-sequence" of a previous thought and thought is applied in order to dispel doubt. Dewey's applies this way of thinking more broadly than Peirce's original application, in that Dewey engages with "human predicaments" (as distinct from hard sciences) and "problematical situations" (Dewey 1938).

Dewey's Analysis of Reflective Thinking (1933) puts forward five phases of thinking that should be followed in order to apply Reflective Thinking. While this process is aimed at 'dispelling doubt', Dewey, as did Peirce, encourages being in a near state of perplexity, that is to say, being open to suspending certainty. The below five phases of Dewey's Reflective Thinking are paraphrased from the original text (Dewey, 1933):

1. A feeling that something is amiss, or out of place that needs to be addressed
2. The formulation of the thing that is amiss, perhaps as a problem statement
3. The construction of a hypothesis that can be tested
4. A thinking through, or unpacking of the elements of the hypothesis
5. Testing and evaluating the hypothesis.

Note that testing and evaluating are very different things. Testing should be looked at as a formative exercise, where the parameters of the testing should be iterated until the validity and reliability of the test is satisfactory. Evaluation can be seen as a summative assessment of the hypothesis, leading to either the rejection or (provisional) acceptance of the hypothesis.

3. Case study

In this section we introduce a case study from the formative stage of the development of the Designing for the common good practice, and a recent interview that is part of a broader research piece exploring public sector innovation leadership. Through these two additions to the paper, we will further explore the overlap with Pragmatist principles, the Designing for the common good practice and future research possibilities that emerge from this reflective exploration, and how Pragmatism interacts with design research and practice at different conceptual levels (individual, project, sector).

3.1 Case study: the library

In this case study we see an issue that is so firmly framed that a cycle of damage and repair takes hold. It is only by looking outside of this initial framing that a more productive situation can be curated. The case study is drawn from a larger piece of research that convened practitioners from crime prevention practice to firstly explore their existing approaches to complex issues, and secondly to test the effectiveness of the practice to generate alternative interventions.

> "The library is located behind a row of shops on one side, behind a row of houses on another, a car park and early childhood centre on the third side, and on the fourth is neighboured by a park and swimming pool.
>
> The library is graffitied weekly, and council cleans it of graffiti regularly, sometimes more than once a day. The windows of the library were regularly smashed from the outside until council fitted security grilles over the windows. The library was broken into, the window smashed from the inside and seriously damaged by fire.
>
> It was closed for a few months to undergo repairs. While the repairs were taking place the site was damaged at night until council hired a security guard to protect the site. The security guard was so threatened by the people who were damaging the library that he started to bring a guard dog along for protection. When the library was reopened it had grilles on all the windows, and shutters on all the doors.

> There have been no charges laid for the persistent damage on the library." (Watson and Kaldor, 2015)

Noting that in crime prevention practice, the *case* variable is filled in based on an evidence-based assessment of what has worked in similar situations before. In this sense, the logic being followed aligns with explanatory/normal abduction, where the *result* and *rule* variables are predetermined, and through following the *rule* the *case* variable is inferred.

In mapping the issue into the Dorst take on Peircean model of logic, the formula playing out can be seen as:

The (pre-determined) **outcome** "protection" is reached through (pre-determined) **approach** "situational crime prevention" which then, through the application of experience to determine **what** actions to take.

Where the original flow of logic was:

1. Desired outcome: protect the community infrastructure
2. How: apply Situational Crime Prevention principles
3. What: security grilles, shutters, security guards, graffiti removal

In talking with the practitioner about the library situation it was clear that there were complex issues at play in the local community. These complex issues were never going to be 'solved' by the instillation of security measures. Another approach was needed:

> "We then identified stakeholders who have been involved in the problem, as well as stakeholders who could be involved in a path forward. Thematic analysis of a sample of these stakeholders (retailers, residents, religious community, library, council, community centre) showed common themes of pride, identity, ownership, belonging, quality of life and safety.
>
> Of these the practitioner believed that pride and ownership were the key themes. Subsets of these themes were culture, family, and diversity. It was recognised that the emerging themes could be arranged in a cycle, and when applied to the library site there was a break in the cycle that was stopping the development of a sense of pride and ownership in the suburb and in turn the library.

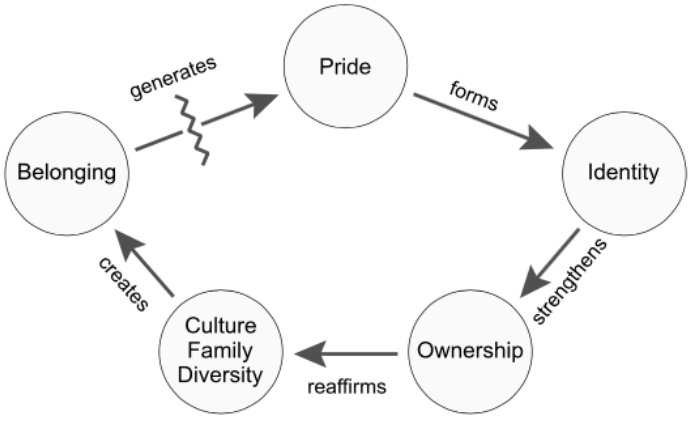

Figure 1. Thematic analysis by practitioner

> Through a discussion of how these themes interrelate in the Library case, it was recognized that there was a break in the cycle between 'sense of belonging' and 'pride'. Having identified this, the question became 'how to create pride in the space?" (Watson and Kaldor, 2015)

The new frame is then constructed as:

What (Markets, outdoor cinema, new cultural collection of books and media) + How (Curation of engagement) = Outcome (Protection)

Where the original flow of logic was:

1. Desired **outcome**: Pride and Ownership
2. **How**: Curate engagement through culturally relevant programming of space
3. **What**: Markets, outdoor cinema, new cultural collection of books

In this instance, the framing approach has opened up the *rule* and *case* variables, and provisionally suspended the *result* variable. In this sense, the logic being followed aligns with innovative/design abduction, where the *result* variable is predetermined, although it also goes beyond design abduction in that it provisionally suspended the **result** variable while pride and ownership are substituted as the desired **result**. With this new *result* in place, the concurrent exploration of a *rule* and a *case* combination that could achieve the *result* are created. A sense check against the original *result* found that the new *rule* and *case* combination were viable in achieving the *result*. Dorst refers to this move as moving outside a "predefined *context"* in order to "create a frame, or novel standpoint" (Dorst 2015 pp. 54-55).

3.2 The interview

As part of a current study, the author interviewed a senior public servant who has a long history of leading innovative initiatives. The study itself is exploring how leading innovators in complex societal contexts, including the public service, go about their practice. The research design has a number of lines of questioning that draw from design, public sector innovation, and change management. In this paper we will focus on the line of questioning that has the most relevance to the intersection of pragmatism, design, and public sector innovation.

Excerpt 1:

> In the public sector there has been a history of conservatism around trying new things. With a dominant culture of 'evidence-based' interventions, the ability to try new things when the current ways aren't working runs up against a culture of evaluation. These evaluations, if done too early will measure the effectiveness of a program before the program has really had a chance to get running properly.
>
> The way around this, in what became evaluated as a successful program, was to be clear about the assumptions that were being made up front, and to build in monthly measurement about those assumptions. These feedback loops then gave us the ability to change and adjust the program almost in real time. By then evaluating the effective-

> ness of the program two years after the participants had left the program, the evaluation was better measuring the impact of the program, rather than how people were going inside the program.

There are a number of obvious elements of pragmatism and design that jump out of the analysis of this part of the interview. Firstly, the Public Sector Innovator describes an approach that is synonymous with Dewey's Analysis of Reflective Thinking (1933), all five phases of thinking are evident:

1. A feeling that something is amiss: *The current approach to dealing with young offenders wasn't working.*
2. A problem was formulated: *Young people were progressing into adult offending. The current system approach isn't working.*
3. A hypothesis was constructed: *If we can address certain aspects of the young people's lives early, we can help them avoid contact with the criminal justice system as adults*
4. The meanings within hypothesis were thought through: *We made a number of assumptions about what would work, and what would need to be done*
5. The hypothesis was tested, and later evaluated: *We tested the assumptions as we went and adapted the program based on the feedback. The impact was then evaluated two years after participants graduated from the program.*

In this second excerpt, the interview question was around how to deal with situations where people in an organization have lost sight of the outcome/purpose behind the actions they identify their job with.

Excerpt 2:

> So what matters is the result, and so you can't attach yourself necessarily to the thing you're doing. If you attach yourself to what you're trying to achieve it becomes much easier to change something, and to fix something, to identify that something is not really in track if you keep that outcome clearly in mind.
>
> Often times, you find people become really attached to the thing that they're doing and will defend it within an inch of their life, even if what they're doing isn't really creating value, and isn't working. Because in fact if they've lost sight of what they're trying to achieve and become really focused in connected to what they're doing, they find it very difficult to separate what they're doing with the outcome that they are trying to achieve, and so sometimes people become blinded by their own activity in the business.

In this excerpt we can draw on Peirce's logic, where the interviewee sees a disjunction between the desired **outcome** and the **how** and **what** of the situation. This also speaks to Dewey's broader impact on sector reform. The interviewees in the study that this excerpt is drawn from are senior practitioners within their sectors. They are dealing with the same level of organisational and sector reform as Dewey's education reform and his work in what we now term Public Sector Innovation. The application of the Pragmatist principles also go

far beyond the context of design projects, in that they are being applied at the organisational and sectorial level in leadership roles.

4. Discussion and conclusions

In coming back to the original work of the pragmatists, certain challenges that were faced in the development of the Designing for the common good practice become clearer:

- James' tender and tough-minded perspectives – acknowledging and respecting that people come from different fields of thought then makes it achievable to introduce a different way of thinking together.
- Peirce's deduction, induction, abduction – allows practitioners to make explicit the different way of thinking together and provides a logic that is then capable of innovating outside of the existing frame.
- Dewey's Reflective Thinking – makes a clear case for reflective practice, instilling a scientific approach to testing and evaluating hypotheses.

One can look at the work of the Pragmatists and wonder how they are not more widely known within various fields. Their influence is more widely known within their fields of specialty (Peirce in Logic, James in Psychology, Dewey in Education and American Democracy). As outlined in the opening section of this paper, the similarities that exist between pragmatist philosophy and design research are not a coincidence. They are both historically and conceptually linked. Schön draws on Dewey in *The Reflective Practitioner* (1983) in the construction of his argument for the move from technical rationality to reflection-in-action.

The very notions of framing/reframing, and abductive logic were concepts that were relatively novel within the areas of Public Sector Innovation. The OECD publication on Public Sector Challenges (2017), and McGann *et al.* (2018, 2021) both situate the operational and methodological approaches of the DOC research centre within the broader Public Sector Innovation field of practice.

Schön's influence within design practice is well understood, however he also points to a larger picture in drawing on Kuhn around reframing; 'Once a new problem is seen to be analogous to a problem previously solved, then "both the formalism and a new way of attaching its symbolic consequences to nature follow'" (Schön 1983, p183).

In drawing on Kuhn in this way, Schön is tantalisingly close to also opening discussion into the notion of paradigm shifts (Kuhn, 1962), which can be seen as analogous to sector level innovation or reform, as seen in Dewey's work in Education, and James' impact within Psychology. The works of Schön and Kuhn are both evident in the positioning of Frame Creation (Dorst, 2015) which has been applied to sector level challenges (Dorst and Watson, 2022).

In engaging with Pragmatism at a sector-change level, the discussion then opens up beyond design at the individual level (the level at which Roozenburg was engaging with Peirce), and the project level as we have mainly engaged here with Dewey. It opens up the conversation to looking at Social Design as a practice, and also the impact that Social Design can have

within and across the sectors it works with. By engaging with this broader lens and bringing deeper fundamentals from Pragmatism, Design, Social Design and Public Sector Innovation could benefit.

It also becomes interesting to look at the differences (the places where there are no obvious (historical) links) to see whether the Pragmatist thinking can spark the development of new social design practices. In drawing on the impact and ambitions of Dewey and James in particular, it could also be fruitful to cast forward to see who else their work has influenced. One example of this is Richard Rorty, who's notion of *final vocabulary* (1989) is an enticing lens through which to explore these potential shifts within and through Social Design and Public Sector Innovation.

Acknowledgements: The Designing Out Crime research centre at the University of Technology Sydney was a partnership with the New South Wales Department of Justice. The authors thank and acknowledge all of the staff and partners who contributed to the body of work.

5. References

Asquith, L., Dorst, K., Kaldor, L. and Watson, R. (2013), "Introduction to Design+Crime", Crime Prevention and Community Safety, Vol. 15 No. 3, pp. 169–174.

Camacho Duarte, O,. Lulham, R,. Kaldor, K. (2011) Co-designing out crime, CoDesign, 7:3-4, 155-168, DOI: 10.1080/15710882.2011.630476

Cornish, D.B. and Clarke, R.V. (2003) Opportunities, precipitators and criminal decisions: A reply to Wortley's critique of situational crime prevention. Crime Prevention Studies 16: 41–96.

Dixon, B. 2020. Dewey and Design: A Pragmatist Perspective for Design Research. Cham: Springer.

Dewey, J. (1910). How We Think. Lexington, MA: D.C. Heath and Company. https://doi.org/10.1037/10903-000

Dewey, J (1930) "From Absolutism to Experimentalism" in Boydston, J. ed., The Later Works, Vol. 5: 1929–1930 (Carbondale, IL: Southern Illinois Press, 1984), 147–160.Google Scholar

Dewey, J. (1933). How we think: A restatement of the relation of reflective thinking to the educative process. Boston, New York [etc.]: D.C. Heath and company.

Dewey, J. (1938). Experience and Education. New York: Macmillan Company.

Dorst, K. (2015). Frame innovation; Create New Thinking By Design. Cambridge, MA: MIT Press.

Dorst, K. , Kaldor, L., Klippan, L., and Watson, R., (2016). Designing for the common good. Amsterdam, BIS publishers.

Dorst, K., and Watson, R. (2020) Reframing and Strategic Transformation, in Boess, S., Cheung, M. and Cain, R. (eds.), Synergy - DRS International Conference 2020, 11-14 August, Held online. https://doi.org/ 10.21606/drs.2020.130

James, W. (1928). Pragmatism, a new name for some old ways of thinking: Popular lectures on philosophy. New York: Longmans, Green, and Co.

Kuhn, T. S. (1962). The structure of scientific revolutions. Chicago: University of Chicago Press.

McGann, M., Blomkamp, E., Lewis, J.M., 2018. The rise of public sector innovation labs: experiments in design thinking for policy. Pol. Sci. 51, 249–267. McGann, M., Wells, T., Blomkamp, E., 2019. Innovation labs and co-pr

McGann, M., Wells, T., Blomkamp, E. (2021) Innovation labs and co-production in public problem solving, Public Management Review, 23:2, 297-316, DOI: 10.1080/14719037.2019.1699946

OECD (2017), Systems Approaches to Public Sector Challenges: Working with Change, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264279865-en

Peirce, C. S. (1934). The Collected Papers of Charles Sanders Peirce, Vol. V: Pragmatism and Pragmaticism. CP 5. Edited by C. Hartshorne and P. Weiss. Cambridge: Harvard University Press.

Roozenburg, N.F.M. and Eekels, J. (1995) Product Design: Fundamental and Methods. 2 Edition, John Wileyand Sons Ltd., Chichester.

Rorty, R. (1989). Contingency, Irony, and Solidarity. Cambridge University Press.

Schön, D. (1983). The reflective practitioner. New York, NY: Basic Books.

Schön, D. (1987). Educating the reflective practitioner. San Francisco: Jossey-Bass.

Talisse, Robert B. and Aikin, Scott F. (eds.) (2011). The Pragmatism Reader: From Peirce Through the Present. Princeton University Press.

Watson, R., and Kaldor, L. (2015). Designing with crime prevention – Creating community wellbeing through design. In DS 80-1 Proceedings of the 20th International Conference on Engineering Design (ICED 15) VOL 1: Design for Life.

About the Authors:

Rodger Watson Educated as a psychologist and criminologist, was Deputy Director of the Designing Out Crime research centre, University of Technology Sydney. He is Senior Lecturer and founding Course Director of the Master of Creative Intelligence and Strategic Innovation at that University's TD School and is a Visiting Research Fellow at Central Saint Martin's College, University of the Arts London.

Kees Dorst Educated as an Industrial Design Engineer (TU Delft), founded the Designing Out Crime research centre at the University of Technology Sydney and is Professor of Design Innovation at that university's TD School. He lectures at universities and design schools throughout the world.