

Jun 25th, 9:00 AM

Beyond design thinking and into speculative futures in legal design

Karma Dabaghi

Lebanese American University, Lebanon (Lebanese Republic)

Follow this and additional works at: <https://dl.designresearchsociety.org/drs-conference-papers>



Part of the [Art and Design Commons](#)

Citation

Dabaghi, K. (2022) Beyond design thinking and into speculative futures in legal design, 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.2022.307>

This Research Paper is brought to you for free and open access by the DRS Conference Proceedings at DRS Digital Library. It has been accepted for inclusion in DRS Biennial Conference Series by an authorized administrator of DRS Digital Library. For more information, please contact dl@designresearchsociety.org.

Beyond design thinking and into speculative futures in legal design

Karma Dabaghi

Lebanese American University, Lebanon

Corresponding e-mail: karma.dabaghi@lau.edu.lb

doi.org/10.21606/drs.2022.307

Abstract: The legal design movement has succeeded in proposing change to communities through collaboration between the legal and design professions. As a result, new kinds of empathetic solutions have been introduced where the citizen experience is prioritized over commercial goals. Still missing from legal design, however, is a stronger understanding of current theoretical literature in design that is questioning the ontology of the discipline and formulating new scenarios of transition toward the future. While proactive law looks to use law to avoid problematic futures, this paper encourages an embrace of speculative design methodologies to imagine the potential problems that need to be addressed before they cause irreparable harm. The Beirut Port blast is given as an example where law and design could have fruitfully collaborated to prevent catastrophe.

Keywords: legal design; speculative design; proactive law; forensic architecture

1. Introduction

Legal systems are traditionally seen as regulating social and commercial interactions between people or entities and providing avenues for redress when the norms of behavior are transgressed. Newer views of law place more importance on the social context in which it develops (sociolegal, e.g., Cowan et al., 2016, p. 15; Perry-Kasaris, 2021, p. 8) and the way that law can be used to avoid future problems rather than address them after the fact (preventive or proactive, e.g., Berger-Walliser, 2012, p. 16). The collective legal design movement was born out of the desire to improve the legal system and make it work better in favor of people (Hagan, 2020). An ongoing concern for the wellbeing of people within communities has led lawyers associated with this movement to reach out to designers who, through human-centered design, have developed a stronger understanding of people's genuine needs and are expert in developing designs to meet them.

We often refer to design as the act of introducing a preferred situation (Simon, 1996, p. 111). This definition is ubiquitous in academia because it facilitates understanding a highly complex field that is manifest in numerous mentalities and goals. Nevertheless, places where the act of designing occurs varies considerably, as does the definition of a preferred situation. For instance, design can be formulated in academia or in practice. It can serve the neoliberal system or choose to oppose it. Design has formulated throughout the years different theories, approaches, and methodologies.



Legal design represents a collaboration between design and law, which began with law's adoption of design thinking methodologies. In design thinking, people work in groups to research, ideate, prototype, pilot, and then repeat the process (Brown, 2009; Kelley & Littman, 2005). Legal design has proposed a *radical iterative effort*, based on technology, as having potentially the best chance to address systemic bias and deliver impartial justice as long as it continues to be closely examined to ensure that it does not have the unintended consequence of introducing bias or injustice into the processes it meant to simplify (Jackson et al., 2020).

The legal profession can further benefit from the field of design by understanding its theoretical aspects that evolve with time and have always proposed speculative futures (Auger et al., 2021). Theoretical designers link design to different disciplines and other fields and have a critical view of design work as it fits within its social settings (Redström, 2017). They have a comprehensive view of societal conditions that allows them to pinpoint the most pressing issues that have the capacity to become highly problematic. A speculative legal design can engage in *futuring* that can help the legal profession develop strategies and methods for holding powerful institutions or powerful individuals to account (Jackson, et al., 2020).

The legal and design professions are both working for a better future. What is problematic is when the future is perceived to be independent from the past or the present. Design theorist Tony Fry (2009, p. 146) writes that, "Even more problematic is the way the future is so often thought of to be a void, a *tabula rasa* waiting to be filled or written upon. The reality is very different. A great deal of the future is delimited by what we have already thrown into it. The future is filled with the attainments and mistakes of the past." The future is being prepared now. Our present actions have consequences for which we need to be held accountable.

To remain relevant, the act of speculating within the field of design examines existing conditions carefully and thoroughly (Auger et al., 2021). By doing this, designers create fictions that are based on critical analyses of people's situations in the present, which bring to the fore serious problems that could arise in the future. For these speculations to be something more than fanciful, they require an honest analysis of underlying situations prior to proposing a speculative future.

2. Legal design

According to Margaret Hagan (2020), legal design is the practice of law that focuses on the citizen. It is an approach to law that incorporates a designers' empathy toward people to help clarify the rights we have, the risks we run, and the rules and policies we are bound by. legal design began by using design thinking methodologies and tactics to improve the legal system and the life of people who interact with it. It sought to address social issues within communities and help improve the relationship of people to their justice system and government (Hagan, 2020).

Legal design aspires to create better social conditions by addressing the biases that are evident in discriminatory practices and prejudicial behavior. This goal represents an activist dimension (Fuad-Luke, 2009), which “...offers a wider theory of change—of how a design approach can feed into improved legal services, policy-making, and civic interactions between people and government” (Hagan, 2020, pp. 3-4).

The application of legal design has created an array of examples that demonstrate the positive impact of design on law. The collaboration between the disciplines of law and design resulted in the creation of many platforms that propagated legal justice and strengthened communities. An example of this is the UAL Social Design Institute (2021, November 13), a collaborative environment that reaches out to the community and its problems and works on introducing new policies that benefit people.

2.1 Design thinking

Design thinking is a human-centered, collaborative, and participatory process. It starts with humans and what they love and need. Then it researches local culture and involves experts, locals, users, and designers, who work together in a team to develop solutions, technological or other, in appropriate ways and improve the human condition. In that way, this multidisciplinary (Kelley & Littman, 2005) helps law engage many stakeholders from the community and propose innovative solutions that make sense to a wider swath of the public.

Hagan indicates that the collaboration with design thinking helped the legal design movement create participatory networks that reveal themselves through public events and propose human-centered solutions, such as the design of legal mapping to understand local rules and policies. It also helped law create exploratory designs that define new agendas and new policies. These piloted interventions are where change happens (Hagan, 2020).

Despite its advantages, design thinking methodology has certain drawbacks. Applying design thinking methodology does not automatically imply success. In 2011, Bruce Nussbaum, a strong advocate of design thinking spoke about the methodology’s failures when companies apply it uncritically. Instead of applying the methodology in a strict manner, Nussbaum advocates for the use of what he refers to as “creative intelligence.” According to David Kelley, founder of the global innovation company IDEO and founder of the d.School at Stanford, design thinking can only succeed under certain conditions. Success necessitates the presence of a culture of prototyping, radical collaboration, empathy, and ideas (d.School, 2021, November 13).

The most potent drawback of design thinking, however, is that it is focused on solving problems that already exist. It understands already established systems and responds to them (Brown, 2009). It does not look at the future consequences of these problems. In the same manner, lawyers who apply legal design engage with practical problem-solving based on their observation of what surrounds them (Davis, M. F., 2020).

2.2 Legal design's engagement with theoretical design

But how ready is legal design to deal with unpredictable situations and unexpected events? Some branches of law have been considering the necessity of being on the lookout for opportunities to change and for anticipating problems with a view toward prevention. Proactive law looks to apply law before things go wrong, looking to identify potential problems and take preventive action before it is too late to do so (Berger-Walliser, 2021, pp. 17-19).

Legal design, by aspiring to be a theory of change (Hagan, 2020), can benefit from understanding the design approaches that try to formulate that change. In his book, *Design as Politics* (2010), Tony Fry encourages all designers and non-designers to understand the potential of design as an instrument of change. Fry also argues that design needs to modify its own ontology to become capable of introducing change. In other words, design needs to shift its focus from its economic function to a potential political frame that formulates social change.

Theories of design help to evaluate the design field's own ontology and redirect its path when necessary. They help in explaining what needs to be accounted for and encourage new mentalities (Redström, 2017). After evaluating the outcomes of already applied approaches, designers use research and theory to formulate new directions, then to create new tactics or methodologies to reach other preferable outcomes. For instance, it was research within the areas of psychology and sociology that studied empathy and the happiness of people within their communities that led to the development of user-centered design (Redström, 2017, p. 4).

In the same manner, to prepare itself to face future problems, legal design can benefit from understanding how design attempts to anticipate the future and speculate about possible issues to come. The questions that need to be asked are the following: which theories are helping design to formulate criticism of the status quo and change for the future? And what are the tactics that designers are using to forge these novel directions toward preferable futures?

3. Critical design and design noir

Critical design emanates from theories that criticize the outcomes of design or the impact that design has had on the world so far. In the world of critical design, theories and intellectual ideologies are used to challenge the prevailing paradigm (Mazé, 2009). This includes the field of design itself. Today, design is seeing an ontological and political redefinition at many levels. Design is preoccupied with resolving social, ecological, and other injustices, and with establishing a more inclusive dynamic within communities. Emergent notions within the field encourage the development of transition visions toward ideas of wellbeing and social conviviality, as well as a transformation of the current dominant economic model into a post-growth economy, where the focus is on social innovation and well-being (Escobar, 2018).

A specific kind of critical design is design noir (Dunne et al., 2001). The name design noir is directly derived from film noir, an artistic movement that was produced by Hollywood,

tended to be highly theatrical, and presented visions of alternative worlds that are darker than reality. Design noir, similar to these movies, becomes a medium to produce complex psychological experiences and to exploit several darker conditions such as “loneliness, deception, paranoia, hopelessness, and lust” (Dunne et al., 2001, p. 51). Dunne and Raby consider design noir any product or service that has the potential to create a mental interface or a metaphysical experience for the user. These products create drama that is usually associated with cinema and literature rather than the design world.

Here, design uses fictional scenarios to stimulate the imagination, disturb the user, and generate debates and discussions about genuine societal concerns. Dunne and Raby use design’s ability to imagine and visualize new alternative worlds to warn about the consequences of society’s behavior. These newly formulated worlds are imagined using fictitious scenarios and are designed to their smallest details. Dunne and Raby use design, along with its aesthetics, to initiate debates that address ethical values and start conversations about adopted behaviors that might negatively affect the future. Their work touches on both academia and the real world. They investigate and research existing conditions, then use design to visualize new, imagined ones that warn about the consequences of irresponsible human action.

Though deep in meaning, Dunne and Raby’s work is still relatable because it remains based on the familiar or on the known typologies of design. This familiarity facilitates the understanding of communicated ideas that often embrace fiction and suggest the unexpected. Dunne and Raby aspire to a kind of design that acts as a literary text, high art, or even a film, with the goal of engaging viewers through the experience of alternate atmospheres that transcend their lived realities and lead to new discoveries. This speculative futuring deals with the social, political, and psychological, and makes the designer an investigator of current conditions and an author with a new story that criticizes or warns. The intention is often to create a strange or unsettling atmosphere that destabilizes and that generates a feeling of menace or fear of what might come as a result of current practices.

4. Speculating in law and design

From a process perspective, lawyers and designers can work together most effectively and have the greatest impact by first examining and critiquing present problems and challenges. This criticism of the present ensures the relevance of anticipated, future problems whose origin is in the present and allows them to plan a transition toward better futures.

From a design perspective, we can see this process on a continuum of critical design, speculative design, fictional design, future design, and transition design as we move from critically examining a problem to a transition toward a future desired state. It is important to note that these design approaches overlap and inform each other (Mitrović et al., 2021). They are valuable to law practice because they have strong ethical and ideological agendas that evaluate the outcomes of human behavior or systems in our societies and identify wrongness and undesirable practices. Research in these fields is focused on the wellbeing of communities as

a whole, and these inquiries identify cases of social injustice. This research also imagines and shapes alternative realities for the future through detailed proposals that highlight either the negative implications of adopted behavior or the potential solutions that could be implemented. These scenarios become detailed proposals to transition toward a world where more rights are respected and where better policies are implemented.

Critical design generates reflection on applied practices and adopted values within a culture. It is a powerful design approach because it can present the unexpected and challenge assumptions (Auger, 2012; Dunne, 1999). Speculative design imagines future scenarios after formulating a critical opinion about the present and a clear criticism about current realities. It proposes alternative worlds and elaborates on these imagined scenarios. These scenarios gain effectiveness when they start from reality, then borrow from the power of literature to imagine comprehensive fictional settings. In all aspects, as Ursula K. Le Guin explains, imaginative fictions help people be aware that there are other ways of doing things (Curry, 2018). Thus, speculative activity is critical thought that is expanded through the creation of diverse visions that become elaborate discussions using detailed possible scenarios with the goal of reaching a better world (Encinas et al., 2021; Mitrović, 2016).

Speculative design builds other worlds through imagined scenarios that often focus on technology. The speculative imaginaries are alternative configurations of reality on behalf of a social, cultural, or political agenda (Smyth et al., 2021). Smyth, Auger, and Helgason refer to the scenario as speculation that has an agenda based on the values and reality of the present as its origin. They also point out the importance of understanding how the proposed speculation can affect future reality.

Speculative design is essential for designers (Butoliya, 2020), but the approach needs to be critical, ambitious, relevant, and responsible (Auger, 2019). Accountability of design proposals is crucial, similar to proactive law (Berger-Walliser, p. 17), as it emphasizes the importance of proposing only what is impactful. Clearly articulating the political motivation of any project and staying accountable to it helps in formulating meaningful projects that result in value-driven effects (Thackara, 2015).

Plausibility to the audience is also important. Many speculative designs are expressions of ideas that stem from the point of view of privileged graduate students seduced with the idea of creating powerful provocations that get shared quickly (Auger et al., 2021). Such speculations are culturally myopic and propose frivolous dystopian scenarios of so-called imagined futures that are very close to existing realities in the third world (Ansari, 2015). These kinds of facile provocations are often based on infantile science fiction (Thackara, 2015). To remain plausible and to engage an audience effectively, a speculation can stretch the limitations of our real contemporary life, but cannot omit what we know and understand from our lived environment (Auger, 2012). Le Guin sees the speculative as a revolutionary approach to be embraced only when the content of its fiction is directly connected to reality (Curry, 2018). This is what I refer to as the *right kind of speculation*.

If lawyers are society's problem solvers who work with precise methods that count on detailed analysis and inquiry (Davis, 2015), then a well-imagined fictional scenario can help both in the understanding of problematic social situations and in the visualization of an alternative future. That future can be based on the formulation of ideal conditions, in the case of a utopian fiction, or on the formulation of a world where people are paying a very high price as the result of present realities gone wrong. The world needs new imaginative narratives about the future because they give people agency and power to create the future that they would like for themselves (Inayatullah, 2008).

5. Working toward speculative legal design that may help prevent catastrophic futures

Branching into speculative futures, legal design may be able to address systemic issues before they become too big to handle. By understanding adopted behaviors and intervening to ensure the accountability of the most powerful, speculative legal design may prevent the aggravation of present problems and their transformation into situations that are too complicated to address adequately. Below, I present the case of the Beirut Port explosion that took place on August 4, 2020.

5.1. Beirut in 2020—A speculative reality

Beirut is a case where poor accountability of the most powerful led to a complete failure of the state and to the largest non-nuclear explosion in the modern world. On August 4, 2020, a huge explosion tore into the fabric of the city causing widespread devastation, hundreds of deaths, and thousands of injuries. The explosion was caused by a massive detonation of ammonium nitrate in a warehouse in the Beirut Port.

The explosion was primed to happen by the negligence of multiple governments that did not regulate the storage of large quantities of ammonium nitrate, which some say were being stored there intentionally for use in illegal weapons manufacture. In fact, the government is complicit in a systematic deception, caring only in their cupidity for ensuring that as the country dissolves around them, they steal whatever is left for themselves.

Time passes without anyone being held accountable for the devastation experienced by the city. Even though the government in power at the time of the blast resigned, the new government is made up of similar people with similar interests. The judiciary is compromised, and each day brings a new dance between government figures interfering in the judicial investigation, and parts of the judiciary interfering with other parts to stymie arriving at the truth of who was responsible for the acceptance and the storage of ammonium nitrate and for knowingly tolerating conditions that led to the explosion.

Today, the Lebanese people despair of having a better future where justice prevails. They have tried to support change by going into the streets to express both their anger with the pace of the port investigation and their support for Judge Tariq Bitar, who challenged parliamentary immunity by issuing arrest warrants for current and former parliamentarians. Street

protests led to armed, sectarian clashes that resulted in seven deaths and many others wounded. Fear of the truth coming out, the law being applied, and the powerful losing their influence has caused civil unrest and street battles between political parties. Street dissent in the face of the powerful (Disalvo, 2012) has only generated more chaos and deterioration of public order. Justice is taken hostage by the politicians who impose their own law of the jungle.

At the request of the independent, Egyptian online newspaper Mada Masr, Forensic Architecture, an agency that helps victims in their search for legal justice, created a timeline of the events as well as a three-dimensional model of the blast site.

5.2. Forensic Architecture and anticipatory forensics

Forensic Architecture is an agency that uses new digital technologies to create architectural models to aid in recreating events. It is a multidisciplinary group made from designers, journalists, archeologists, architects, filmmakers, and artists who visualize precise findings that can be used within legal venues as evidence. The firm refers to this activity as counter-forensics.

Their goal is to work on behalf of citizens who cannot defend themselves from the action of governments and states. The examination of events and recreation of timelines are a way to point the finger at violations that are committed by powerful political institutions that are hard to oppose.

According to Eyal Weizman, architect, Professor of Spatial and Visual Cultures and the director of the agency, courts are traditional, and artists are an appropriate supplement for an investigation. Weizman considers aesthetic practices an essential part of the process of conducting an investigation (Logan Symposium, 2016). The investigative work of Forensic Architecture is generated from videos, photographs, and other documents to create a case where the official investigators themselves might be responsible for the injustice. The agency conducted a counter-forensic investigation into the Beirut Port blast and produced a twelve-minute video outlining their findings and observations (Forensic Architecture, 2021). In this case, the results are public, which is one of the strengths of their investigation.

The investigators examined geolocated videos and photographs, together with documentary evidence to identify what was being stored in the warehouse, where in the warehouse it was being stored, and how it was being stored. Based on the timeline, the sequence of smoke plumes emanating from the warehouse, and the photos of the interior of the warehouse, Forensic Architecture determined that a first plume was caused by a fire, a second by burning tires, a third by fireworks, and a fourth by the detonation of the ammonium nitrate (see Figure 1).

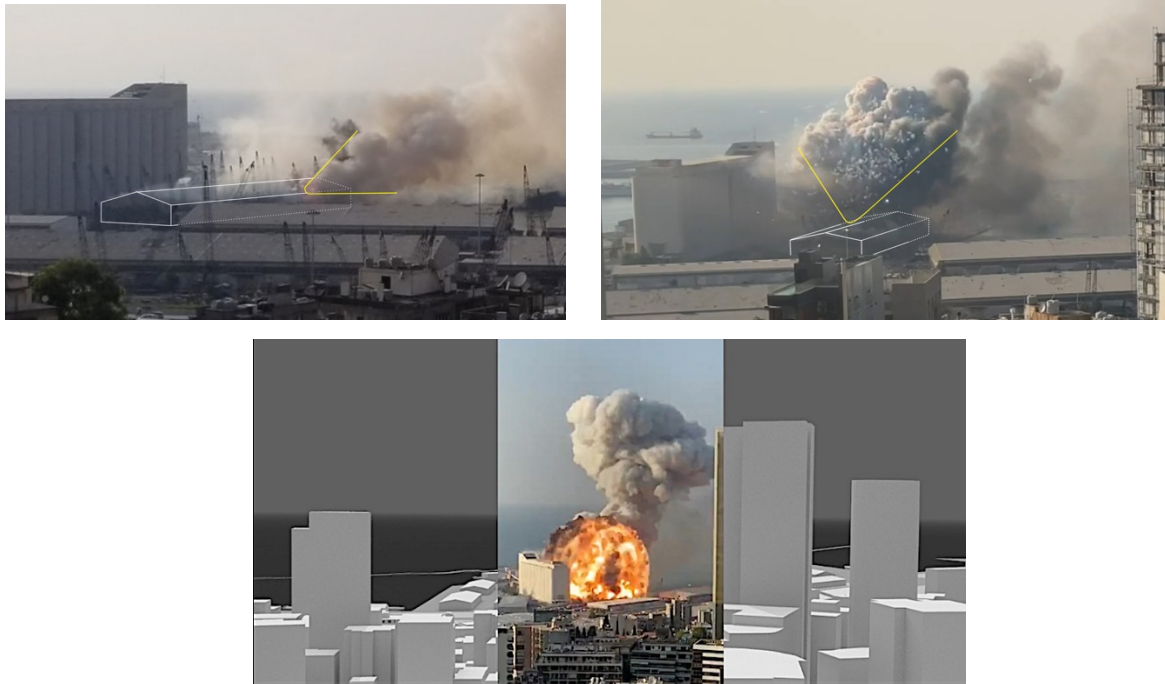


Figure 1. Plumes emanating from different locations and showing smoke from different combustibles.

In contravention of international norms, fireworks and tires were being stored together with ammonium nitrate, and all the ammonium nitrate was being stored in one pile instead of in 300 or 500-ton blocks separated by 1 meter from walls and from each other (see Figure 2). In addition, the bags of ammonium nitrate were torn open, spilled, and contaminated (see figure 3).

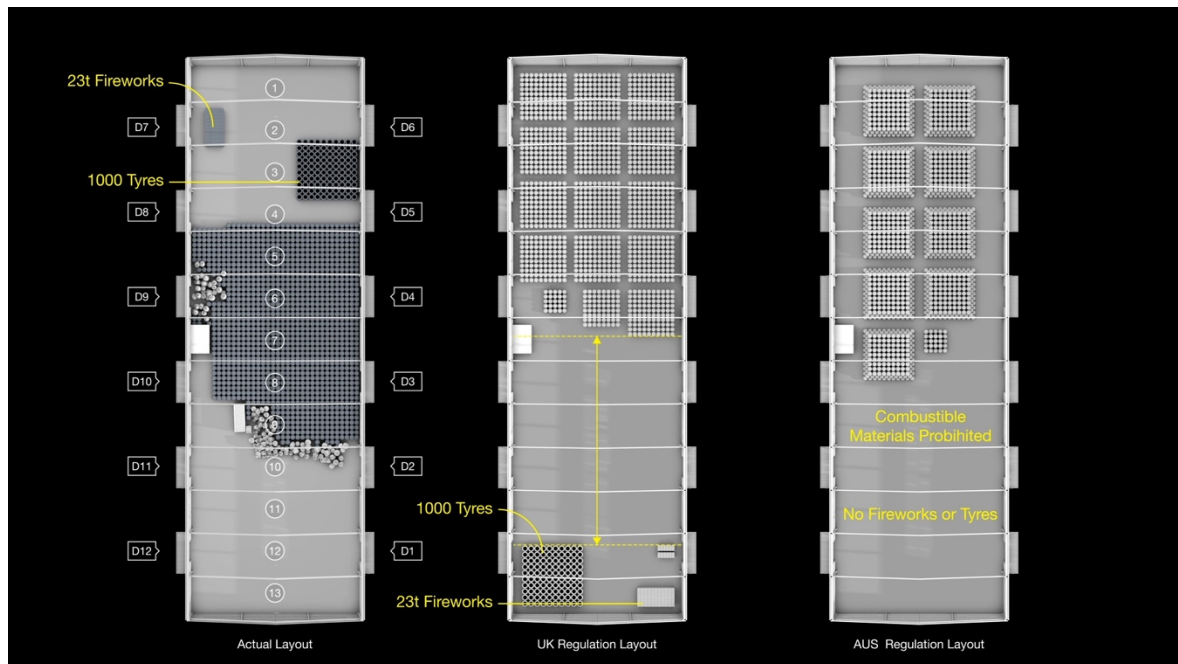


Figure 2. Standard storage according to international norms compared to the warehouse where the ammonium nitrate was being stored in the Beirut Port.



Figure 3. Rendering of the interior of the Beirut Port warehouse based on existing photographs.

Finally, the ammonium nitrate was being stored within 480 meters of the closest residential areas, also contravening international norms requiring 1,570 meters of separation. That the state knew of these conditions is confirmed by the investigators based on documentary evidence starting in October of 2014 when the ammonium nitrate was unloaded into the warehouse. Additional warnings were given in December of 2014 by customs officials and February of 2015 by a chemical forensic expert. Additional photographic evidence of the storage conditions dates from February of 2020.

This investigation suggests that years of government negligence led to the explosion that killed over 200 people and injured over 6,500. The negligence was consistent and sustained. The work of Forensic Architecture may lead to the victims being able to press their case for justice and compensation in the face of dragging official investigations.

The designerly work of Forensic Architecture on the Beirut Port explosion visualizes facts that could be used as evidence in courts of law. This designerly contribution came after a disaster of unprecedented scale. These techniques might also be used to create visualizations that help avoid disasters before they happen.

As noted earlier, speculative design has a long track record of anticipating possible futures and using designerly ways that make “abstract dimensions of alternative futures visible and tangible” (Perry-Kassaris, 2021, p. 81). Fictional scenarios become relevant when they emanate from reality (Eco & Coles, 2016). Beirut is a powerful example of how past actions bring into being what follows (Fry, 2009). In this case, irresponsibility and corruption led to disastrous results. Perhaps the explosion of the Beirut Port on August 4, 2020 could have been prevented. What if Forensic Architecture had used their modeling capabilities to anticipate and visualize a design noir version of a dystopian future where the stored chemicals were to explode?

Ammonium nitrate was offloaded into the port in 2014. According to the news agency Al Jazeera, “everyone at the highest levels of government including the president were aware that the chemicals were stored at the warehouse for years without proper safety precautions,” and, “Journalists, such as Riad Kubaisi, who have been physically attacked over the

years for investigating corruption at Beirut Port, have documents that show [that] years of inaction and negligence failed to dispose of the explosive chemicals” (Khodr, 2022).

We also know that when ammonium nitrate explosions happen, they cause extensive damage to the surrounding areas and a considerable loss of life in addition to large numbers of injured. Such significant accidents already occurred in Germany, the United States, France, and China (Science Media Center, 2020).

In this spirit, while re-constructive forensic investigations currently model *what* happened, Forensic Architecture’s methodology and techniques could create a *pre-constructive* investigation. In other words, the agency would engage in anticipatory forensic architecture that could theoretically hold the culpable legally responsible for criminal negligence before this negligence leads to a disaster. What if a counter-forensic investigation consulted open-source documents, videos, and photographs and spoke with experts to direct its techniques toward anticipating and preventing the catastrophic explosion, rather than having to create a counter-forensic case to re-create what happened and expose the culpable. In that case, public evidence would assign accountability for failing to follow proper measures of storing dangerous chemicals instead of dealing with the aftermath of the biggest non-nuclear explosion in the world.

Proactive law proposes using law to prevent that which is not desirable and keeping problems from occurring, just like preventive law. But in addition, proactive law promotes what is desirable (Berger-Wallisier, p. 22). It also proposes such law in an interdisciplinary context. What design brings to the table is speculation of futures and an aesthetic approach that allows the construction of counter-forensic models, and when combined with proactive law, allows the construction of anticipatory forensic models. The question that proactive law researchers would then ask is how to use present evidence to speculate about possible futures with the intention of preventing possible catastrophic situations. Exposing the situation before it gets bad (just like fictional designers do) could be a way of preventing it.

In the case of the Beirut Port, much of the photographic and documentary evidence existed prior to the actual disaster and had a study been commissioned, the significantly dangerous defects in the storage of materials in the warehouse could have been identified through the process of anticipatory forensics and the public release of this report could have led to correcting the manner of storage and thus could have avoided the disaster.

6. Conclusion

In legal design, lawyers reach out to designers to serve humanistic purposes and propose better law-related societal conditions. Lawyers have borrowed design methods successfully to increase their reach to communities and to address people’s needs with greater empathy. Designers connect with people, work creatively, and criticize current conditions and propose better futures. Lawyers with a proactive attitude and the intention to propose solutions that help prevent future problems can collaborate with designers who share similar aspirations

for a safer world. Advanced technological methods and aesthetic practices, combined with the speculative, imaginative power of designers, have considerable potential to contribute in significant ways to further developments in legal design.

7. References

- Ansari, A. (2015, July 16). Debate: On critical design [Session at Knotty objects: MIT Media Lab's first design summit]. Event site: <https://www.media.mit.edu/events/knotty-objects/>
- Auger, J. H. (2012). *Speculative design: The domestication of technology and the considered future* (Unpublished doctoral dissertation). Royal College of Art, London.
- Auger, J. H. (2019, December 12). Design essentially needs a revolution [Interview]. Retrieved from <https://speculativeedu.eu/interview-james-auger/>
- Auger, J. H., Hanna, J., & Mitrović, I. (2021). Beyond speculative design. In I. Mitrović, J. Auger, J. Hanna, & I. Helgason (Eds.), *Beyond Speculative Design: Past – Present – Future* (pp. 12-23). Split: SpeculativeEdu; Arts Academy, University of Split.
- Berger-Walliser, G. (2012). The past and future of proactive law: An overview of the development of the proactive law movement. In G. Berger-Walliser & K. Østergaard (eds.), *Proactive Law in a Business Environment*, pp. 13-31. Copenhagen: DJØF Publishing. Retrieved from <https://ssrn.com/abstract=2576761>
- Brown, T. (2009). *Change by design: How design thinking transforms organizations and inspires innovation* (1st ed.). Harper Business.
- Butoliya, D. (2020, July 2). There is no prescriptive way to do speculative and critical design. Retrieved from <https://speculativeedu.eu/interview-deepa-butoliya/>
- Cowan, D & Wincott, D (2016). Exploring the 'legal.' In D. Cowan & D. Wincott (eds.), *Exploring the 'Legal' in Socio-Legal Studies*, pp. 1-31. NY: Palgrave.
- Curry, A. (2018). Worlds of Ursula K. Le Guin [Documentary]. Retrieved from <https://tv.apple.com/us/movie/worlds-of-ursula-k-le-guin/umc.cmc.4n628j8sec6pjanbvg3tpezd>
- d.School. (2021, November 13). A place for explorers and experimenters at Stanford University. <https://dschool.stanford.edu/about>
- Davis, M. F. (2015). Institutionalizing legal innovation: The (re)emergence of the law lab. *Journal of Legal Education*, 65(1), 190-206.
- Davis, M. F. (2020). What is essential: Legal design and client stories. *The Elon Law Journal*, 13(1), 39-74.
- Disalvo, C. (2012). *Adversarial Design*. Cambridge: MIT Press.
- Dunne, A. (1999). *Hertzian tales: Electronic products, aesthetic experience, and critical design*. Cambridge: MIT Press.
- Dunne, A. & Raby, F. (2001). *Design noir: The secret life of electronic objects*. Basel: Birkhäuser.
- Eco, U. & Coles, A. (2016). Here I am—Not a fiction. In A. Coles (Ed.), *Design Fiction* (Ser. EP, volume 2) (pp. 7-16). Berlin: Sternberg Press.
- Encinas, E., Božanić, S., & Šuran, O. (2021). Methods, approaches, and tools: Ambiguity, tensions, and scopes. In I. Mitrović, J. Auger, J. Hanna, & I. Helgason (Eds.), *Beyond Speculative Design: Past – Present – Future* (pp. 94-165). Split: SpeculativeEdu; Arts Academy, University of Split.
- Escobar, A. (2018). *Designs for the pluriverse: radical interdependence, autonomy, and the making of worlds* (Ser. New ecologies for the twenty-first century). Duke University Press.

- Forensic Architecture. (2021). *The Beirut port explosion*. <https://forensic-architecture.org/investigation/beirut-port-explosion>.
- Fry, T. (2009). *Design futuring : sustainability, ethics, and new practice* (English). Berg.
- Fry, T. (2010). *Design as politics* (English). Berg.
- Fuad-Luke, A. (2009). *Design activism: Beautiful Strangeness for a Sustainable World*. Routledge.
- Hagan, M. (2020). Legal design as a thing: A theory of change and a set of methods to craft a human-centered legal system. *Design Issues*, 36(3), 3-15.
- Inayatullah, S. (2008). Six pillars: Futures thinking for transforming. *Foresight (Cambridge)*, 10(1), 4-21.
- Jackson, D., Kim, M., & Sievert, J. R. (2020). The rapid embrace of legal design and the use of co-design to avoid enshrining systemic bias. *Design Issues*, 36(3), 16-30.
- Kelley, T., & Kelley, D. (2012). Reclaim your creative confidence. *Harvard Business Review*, 90(12), 115-135.
- Kelley, T. & Littman, J. (2005). *The ten faces of innovation: IDEO's strategies for beating the devil's advocate & driving creativity throughout your organization*. New York: Doubleday.
- Khodr, Z. (2022). Lebanon judge arrests more over Beirut blast. <https://www.aljazeera.com/news/2022/2/18/call-for-fair-investigation-for-beirut-blast-victims>
- Logan Symposium: Centre for Investigative Journalism, LoganCIJ16: Methods and tools for visual investigations. (2016). Forensic architecture. Retrieved April 3, 2022, from <https://forensic-architecture.org/programme/events/logancij16-methods-and-tools-for-visual-investigations>.
- Mazé, R. (2009). Critical of what? In M. Ericson, & International Artists Studio Programme in Sweden (Eds.), *Iaspis forum on design and critical practice: The reader* (pp. 379-397). Stockholm: Iaspis.
- Mitrović, I. (2016). Introduction to speculative design practice [PDF file]. Retrieved from <http://speculative.hr/en/introduction-to-speculative-design-practice/>
- Mitrović, I., Hanna, J., & Helgason, I. (2021). An overview of speculative design practice. In I. Mitrović, J. Auger, J. Hanna, & I. Helgason (Eds.), *Beyond Speculative Design: Past – Present – Future* (pp. 68-93). Split: SpeculativeEdu; Arts Academy, University of Split.
- Nussbaum, B. (2011). *Design thinking is a failed experiment. So what's next?* <https://www.fastcompany.com/1663558/design-thinking-is-a-failed-experiment-so-whats-next>
- Perry-Kessaris, A. (2021). *Doing sociolegal research in design mode*. Routledge.
- Redström Johan. (2017). *Making design theory* (Ser. Design thinking, design theory). MIT Press. Retrieved November 6, 2021,
- Thackara, J. (2015). Republic of Salvation. In P. Antonelli & J. Hunt (Eds.), *Design and violence* (pp. 60-63). New York: Museum of Modern Art.
- Science Media Center. (2020). *Expert reaction to the Beirut explosion*. <https://www.sciencemediacentre.org/expert-reaction-to-beirut-explosion/>
- Simon, H. A. (1996). *The sciences of the artificial* (3rd ed.). MIT Press.
- Smyth, M., Auger, J., & Helgason, I. (2021). Echoes of futures past—Speculations and fictions from history. In I. Mitrović, J. Auger, J. Hanna, & I. Helgason (Eds.), *Beyond Speculative Design: Past – Present – Future* (pp. 24-67). Split: SpeculativeEdu; Arts Academy, University of Split.
- UAL Social Design Institute. (2021, November 13). *UAL Social Design Institute*. <https://www.arts.ac.uk/ual-social-design-institute>.

About the Author:

Karma Dabaghi is an architect, product designer, and assistant professor whose research targets critical design and activist objects. She exhibits at design fairs and art venues across Europe and Asia. She was named one of Lebanon's top designers in 2017.