Introduction

How effective is a legal system that people cannot understand how to use? How can we use participatory, creative design methods in public institutions to serve people better? These questions, posed by guest editors Margaret Hagan and F. Kürşat özenç, are at the heart of this special issue: *The Rise of Legal Design*. They are undeniably design questions, involving issues such as usability, capability, human-centered and service design. In their effort to answer these questions, contributors to this issue apply the skills, methods, and insights of design theory and practice to promote greater transparency and accessibility throughout the legal system. A special issue like this operates on multiple levels. It focuses attention on a significant topic and weaves together the threads of earlier work. As such, this issue marks an important milestone in the maturation of significant areas of inquiry. Long-time readers of *Design Issues,* for example, will recognize links between the arguments presented here and previous work published in this journal such as Liesbeth Huybrechts, Katrien Dreessen, and Ben Hagenaars's *Building Capabilities Through Democratic Dialogues* (vol. 34, no. 4 Autumn 2018), Marc Steen's *Organizing Design-for-Wellbeing Projects: Using the Capability Approach* (vol. 32, no. 4 Autumn 2016), Ezio Manzini's *Design Culture and Dialogic Design* (vol. 32, no. 1 Winter 2016), and Andy Dong's *The Policy of Design: A Capabilities Approach* (vol. 24, no. 4 Autumn 2008). *The Rise of Legal Design* is a notable step in the process of building a bridge between communities of expertise both legal and design. On another level, this issue is an important part of the effort to promote greater rigor, develop appropriate metrics, and collect the kind of case studies that can support evidence-based arguments for legal design and identify best practices. As this special issue demonstrates, the design community has much to contribute to the development of legal design. At the same time, there is ample evidence here that designers have much to learn from their peers in the legal profession.

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Guest Editor's Introduction

Over the past five years, a new field of legal design has blossomed in courts, government agencies, legal departments, and civil society. The core principles of legal design are twofold: that the legal system should better serve the people who try to use it to solve their problems, and that the lawyers and professionals who operate this system should use a more creative, intentional and human-centered process to solve problems and develop rules and policies. Legal design labs and events are popping up in the Department of Justice, mayors' offices, universities, foundations, human rights groups, legal aid conferences, and law firms.

As this movement of human-centered legal design begins to crystallize, this special issue of *Design Issues* spotlights cases, approaches, and underlying theories and dynamics from participants in the movement. We expect this collection to be a foundational text for the growing network of legal designers, showing how to work this way and revealing what a more ambitious approach to design-driven reform of legal services and government operations could be. One of our key intentions is to expand the notion of legal design beyond document and communication design. Most lawyers and professionals who come to legal design begin with the notion that this movement is about presenting information in more user-friendly and engaging ways. This aim is also how the legal design movement itself started—around contract and legislation presentation design. However, the work now has expanded into much more complex and systemic efforts: taking prototyping approaches to drafting policies; using participatory design work to craft new services and organizations; and reforming whole legal systems of rules, processes, and services through design processes. The cases in this special issue, "The Rise of Legal Design," draw out this point—all with the aim of establishing a more meaningful, influential vision of legal design in the coming decades.

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Legal Design as a Thing: A Theory of Change and a Set of Methods to Craft a Human-Centered Legal System

Margaret Hagan

Introduction

Human-centered design has been a dominant innovation methodology in service industries, from medicine to insurance to finance.[1] It has now come to the legal system, together with movements related to legal technology, legal hacking, and access to justice reform, as a collective legal design movement.[2]

University labs, conferences, classes, and new job positions are oriented around "legal design"—the marriage of a human-centered design approach to the challenges and structures of the legal system.[3] This burgeoning community of people is interested in using a design approach to improve the legal system.[4] In light of this growth, the need arises for more rigor: rigor in how a design process is applied, in how design research is conducted, and in how the outcomes of this process and research are evaluated. Further discussion is needed to ground this design work, which is often creative, decentralized, and open, in an essential set of methods and instruments. These parameters can ensure honest reflection on how well the design approach can serve the legal system, improve people's access to justice, and promote innovation in this professional community.

This special issue presents pieces from lawyers, designers, technologists, scholars, and community organizers that detail what legal design is in practice. The pieces demonstrate how the craft of legal design is developing as one that combines a community-oriented co-design ethos, with a commitment to navigating the bureaucracies of the legal system to effect change, and with the integration of empirical research to evaluate whether user-centered design and policy proposals do, in fact, improve people's outcomes.

Before readers dive into this collection of cases, this introductory piece gives some initial grounding. It offers an initial legal design process, set of research methodologies and instruments, and grounding in analogous fields and literature. It also offers a wider theory of change—of how a design approach can feed into

1 Charles Owen, "Design Thinking: Notes on Its Nature and Use," *Design Research Quarterly* 1, no. 2 (2006): 16–27; Tim Brown, "Design Thinking," *Harvard Business Review* (June 2008): 85–92; Charles Owen, "Design Thinking: Driving Innovation," *BPM Strategies Magazine,* The Business Process Management Institute, September 2006; and Richard Buchanan, "Wicked Problems in Design Thinking," *Design Issues* 8, no. 2 (Spring 1992): 5–21. doi.org/10.2307/1511637.

2 Colette Brunschwig, "On Visual Law: Visual Legal Communication Practices and Their Scholarly Exploration," in *Zeichen Und Zauber Des Rechts: Festschrift Für Friedrich Lachmayer* [Signs and Magic of the Rights: Commemorative for Friedrich Lachmayer] eds. Erich Schweihofer et al. (Bern: Editions Weblaw, 2014), 899–933; Véronique Fraser and Jean-François Roberge, "Legal Design Lawyering: Rebooting Legal Business Model with Design Thinking," *Pepperdine Dispute Resolution Law Journal* 16, no. 2008 (2016): 303–16; Jamie Young, *A Virtual Day in Court: Design Thinking and Virtual Courts* (London: RSA, 2011); Victor Quintanilla, "Human-Centered Civil Justice Design," *Penn State Law Review* 121, no. 3 (2017): 745–806; and Mark Szabo, "Design Thinking in Legal Practice Management," *Design Management Review* 21, no. 3 (September 29, 2010): 44–6.

3 Margaret Hagan, "The State of Legal Design: The Big Takeaways of the Stanford Law + Design Summit," *Legal Design and Innovation,* September 25, 2017, https://medium.com/legal-design-and-innovation/the-state-of-legal-design-the-big-takeaways-of-the-stanford-law-

https://doi.org/10.1162/desi_a_00600

improved legal services, policy-making, and civic interactions between people and government. This initial vision of a rigorous design and research methodology for the legal system is a first version; researchers and practitioners can refine it as they learn the best methods to use in specific legal contexts. As an initial architecture, it aims to open a conversation around rigorous human-centered experiments to improve the legal system. It also seeks to engender a willingness among those working on design, technology, and innovation in law to hold themselves accountable with a commitment to strong research and evaluation standards.

A Design Approach to Legal System Innovation

Legal design is a nascent movement to make the legal system work better for people.[5] It has been developed out of work in human-centered and visual design, civic technology, and participatory policy-making. It brings a lawyerly focus on abstract complexities (e.g., what rights we have, what risks we face, what rules constrain us) with a designerly focus on lived experience (how we do things, how things look and feel to us, how things serve us). Both the lawyerly focus and designerly focus share a core similarity: to strategically improve people's outcomes in a system, to solve complex problems, to be in service.

Legal design seeks the improvement of the legal system on multiple fronts: It wants to make the system more accessible to lay people who must use it to resolve problems with money, housing, and family; it has in view corporate professionals who use the system to contract, litigate, and conduct business; and it serves policy-makers and government officials who use the system to set standards, hold powerful interests accountable, and enforce compliance based on rights and obligations.

The purpose of legal design is to develop a human-centered, participatory approach to reforming the legal system—one that recognizes the importance of new technology but that does not privilege it as the main way to innovate. The approach weaves together design of documents, products, services, spaces, policies, and laws to make systemic changes that still pay close attention to front-line realities. It recognizes the value of having interdisciplinary, inclusive groups build and test new improvements to the system. Legal design draws on the creative exploration and making of design work, along with the systems thinking and analysis of legal work.

The wider theory of change for a design-driven approach to law is that cascading layers of efforts are needed for transformative impact. The entry points could be diverse and multi-channel. For example, one flow could look as follows:

design-summit-ee363b5bf109; and Nora Al Haider, "The Legal Design Summit Recap: Uncharted Territory," *Legal Design and Innovation*, January 1, 2018, https://medium.com/legal-design-and-innovation/the-legal-design-summit-recap-uncharted-territory-77d8795315cc.

4 See the Legal Design Alliance at https://www.legaldesignalliance.org/ (accessed February 20, 2020).

5 Legal Design Alliance (website), "The Legal Design Manifesto," 2018, https://www.legaldesignalliance.org/.

1. *Broader, participatory network.* A diverse group of professionals (beyond lawyers) and the public are involved in discussions and design of how to reform the legal system, through design events.
2. *Human-centered research of needs and opportunities.* This interdisciplinary, participatory network can conduct research into what people's needs and opportunities are regarding the legal system. This research might consider justiciable events, experiential and process problems, and usability breakdowns. It also involves legal mapping, to understand the rules, policies, and legislation that define the current system and that might be levers for future interventions.
3. *Exploratory designs.* The research defines an agenda regarding new products, services, and policies that can make the legal system work better for people. Groups in university labs, public institutions, foundations, small companies, and large existing legal and professional services companies develop and test-run these new improvements, using the research to guide them. This step involves exploratory design and research. Often in legal design, these test runs mix the introduction of new frontline programs (e.g., communications, products, technology, services, and spaces) with reform of backend structures (e.g., rules, laws, regulatory structures, norms, and policies).
4. *Field pilots and evaluation.* The new interventions and policies that test well in the exploratory stage are then refined sufficiently to be piloted in the field. People's experiences and outcomes are evaluated to determine whether they increase both the level and quality of justice and the efficiency and usability of the system. Outcomes might include people's ability to resolve issues promptly, fully, and collaboratively. They also might relate to people's ability to comprehend and act in the legal system.
5. *Scale and replication.* The piloted interventions and policies that are shown through observational and controlled trials to have positive outcome are then scaled and replicated and established as the new standard for how the legal system should operate.
6. *Long-term evaluation.* In a longer timeframe, the implementations can be evaluated for larger, downstream implications. Studies can determine whether they improve rule of law, alleviate poverty, improve quality of life, improve the economy, and improve people's relationships with the justice system and with government more widely.

This vision of legal design serves to launch new policy reforms, technology interventions, and service and visual design initiatives that can improve the legal system. Users of legal design approach should have a commitment to a participatory public involvement; dedicated focus on people's experiences and outcomes; experimentation with technology, services, visuals, and policy design; and gradual refinement of new solutions that pair creative innovation theory with evidence-based policymaking. In addition to laying out potential effects and outcomes of legal design, this theory of change provides the base architecture for methods that can be used to produce them. Each phase of legal design work entails different sets of methodologies to do rigorous, rich work. The next sections go through each phase to discuss specific methods.

Methods for Legal Design Work

The heart of legal design is the human-centered design process, which involves a basic sequence of design work.[6] It begins with a phase of seeking to understand a challenge area (or possible areas for reform) through interviews, ethnography, observations, data gathering, and exploratory workshops. The process then moves toward synthesizing specific user personas, needs statements, requirements lists, and design briefs. Brainstorming, speculative designs, collaborative co-design, and early rough prototyping follow to begin trying out new ways to resolve the defined challenge. This expansive creativity then gradually moves toward specific prototypes, which are tested for usability, experience, and feasibility. Prototypes are gradually refined toward pilots through testing and co-design, which leads toward pilots and scaled implementations.

Although the human-centered design process has grown in prominence as an innovation method, it is not often grounded in academic or rigorous methodology. Legal design, at this early stage of its development, can be more intentional about how and why it is practiced. Like many other fields that also use a design-driven approach to generate new interventions and knowledge—like social innovation, human–computer interaction, research through design, design for dignity, and participatory design—legal design can create a hybrid of methodologies that leads to practical and academic results. If the goal of legal design is to create not just new innovations, but innovations that can be piloted and can form the basis for evidence-based reforms and policymaking in the justice system, then a heightened level of attention to methodology is necessary.

6 See more detailed descriptions of this process in Brown, "Design Thinking"; Lucy Kimbell and Joe Julier, *The Social Design Methods Menu* (London: Fieldstudio, October 2012), 1–56; and Lisa Carlgren et al., "Framing Design Thinking: The Concept in Idea and Enactment," *Creativity and Innovation Management* 25, no. 1 (2016): 38–57.

Participatory and Cross-Disciplinary Innovation Communities

At the initial stage of legal design work—of bringing a wider community into the agenda-setting, creation, and evaluation of new innovations in the justice system—the methodology centers on creating a more participatory and interdisciplinary group of stakeholders who are involved in the design process.

Methods from *participatory design* offer particularly helpful guidance in this phase.[7] This version of a design process integrates more stakeholders into decision-making roles during exploratory research and design. This integration occurs through collaborative workshops, design camps, community awards, co-design sessions, making and prioritization games, and other methods that allow for a wider variety of people to participate in design.[8] The methods are often dynamic and interactive. Participatory methods are qualitative, generative tools for research into people's needs, creating new concepts and setting the agenda.[9]

Participatory action research in law and elsewhere also puts community members at the center of new reform efforts.[10] The methods include holding concept mapping workshops to let various groups and people think through power relationships, current process, and visions of how the system could be better. Other methods include asset mapping (to identify common strengths and talents outside the formal institutions), appreciative inquiry to build a resource map of how leaders can better draw on the community, and seeing issues from a different perspective when prioritizing community resources. Fishbone diagrams, that lay out sequences of actions and people into a backbone and offshoots, reveal root causes to symptoms and surface dynamics—can be used in a group setting to understand true problems and needs, as well as to build better community relationships around common points of view.

Photovoice is a more distributed method (outside of a workshop), in which community members take photos and collect images to bring to the group to represent the challenge being discussed. These images initiate an analytic conversation about community experiences and needs.

Other work from open government, such as *participatory budgeting* and other methods, involve the citizenry in government reform and can serve as analogous inspiration for legal designers.[11] Ongoing consultations and creative interactions between elected officials, members of the public, and career government workers can cross over from formal, rigid public consultations to more collaborative, open-ended, and creative design work.[12] This outcome also motivates *open contracting*—a process that could be adapted to other government functions.[13]

7 Ezio Manzini and Francesca Rizzo, "Small Projects/Large Changes: Participatory Design as an Open Participated Process," *CoDesign* 7, no. 3–4 (2011): 199–215.

8 Elizabeth Sanders, "From User-Centered to Participatory Design Approaches," in *Design and the Social Sciences,* ed. J. Frascara (London: Taylor & Francis, 2002), 1–8.

9 Veronica Donoso et al., *Increasing User Empowerment Through Participatory and Co-Design Methodologies* (Brussels: EMSOC, 2014); and Clay Spinuzzi, "The Methodology of Participatory Design," *Technical Communication* 52, no. 2 (2005): 163–74.

10 Emily Houh and Kristin Kalsen, "It's Critical: Legal Participatory Action Research," *Michigan Journal of Race & Law* 19, no. 2 (2014): 287–347.

11 Anirudh Dinesh, "Participatory Budgeting and Civic Innovation in the Digital Age," GovLab Blog, March 15, 2016, http://thegovlab.org/participatory-budgeting-and-civic-innovation-in-the-digital-age-2/; and Sónia Gonçalves, "The Effects of Participatory Budgeting on Municipal Expenditures and Infant Mortality in Brazil," *World Development* 53 (2014): 94–110.

12 Julie Simon et al., *NESTA Digital Democracy: The Tools Transforming Political Engagement* (London: NESTA, 2017).

13 Open Contracting Partnership, *Open Contracting: A Guide for Practitioners By Practitioners* (Washington, DC: Open Contracting Partnership, 2013).

The burgeoning movement in open government and participatory social services, along with *policy labs and living labs,* provides a rich array of tested methods that legal designers can borrow when expanding the stakeholders included in justice reform.[14] These labs have developed models to combine more interdisciplinary professional teams and to tackle challenges using hybrid methodologies that cross traditional barriers. The policy labs' ways of structuring innovation teams, of consulting with the public, and of shepherding creative work from exploration to pilot all can serve as blueprints for legal design work.[15]

Human-Centered Research into Legal Needs and Opportunities

In the second phase of legal design work, which involves understanding what a human-centered agenda of legal reform should be, the methodologies focus more on uncovering needs and prioritizing opportunities.

The literature focusing on *legal needs surveys* describes a more quantitative approach to integrate into this understanding of needs.[16] These surveys begin to categorize areas of justiciable events that people have and to offer some understanding of patterns, clusters, and people's behavior in response to these legal problems. They reveal large-scale trends that can guide more micro-level design research.

Research methods focusing on large-scale trends and particular user-generated content on various *Internet services*—methods that are used by those working on social innovation, political activism, and public health—can also help legal designers to better understand needs and opportunities. Methods to audit search results can be used to understand how people are interacting with legal services online.[17] Bots, crowdsourcing, and online classification tools powered by artificial intelligence (AI) also can be used by researchers to spot, count, and characterize people who are expressing needs while on social media (e.g., on Twitter, Google, and other platforms).[18]

Design research methods bring a more grounded, qualitative understanding of needs and experience. *Applied ethnography* is a primary technique used for legal design research into user needs. It entails either observations of people in legal institutions, doing legal tasks, or researchers' going through the processes themselves (either shadowing litigants or professionals, or undertaking the legal tasks themselves).[19] This technique also can involve stakeholders who do collaborative design, mapping their journey, in situ acting and improvisation of scenarios, self-recording diaries, sharing of their artifacts, and interacting with props and playful mock-ups.[20] The goal is to find people in the context of the

14 Christian Bason, "Discovering Co-Production by Design," *Public and Collaborative: Exploring the Intersection of Design, Social Innovation, and Public Policy,* eds. Ezio Manzini and Eduardo Staszowski (New York: DESIS, 2013): vii–1.

15 Christian Bason et al., "How Public Design?," in *Copenhagen Design Week 2011 Proceedings* (Copenhagen: MindLab, 2011); Lucy Kimbell, *Applying Design Approaches to Policy Making: Discovering Policy Lab* (Brighton: University of Brighton, 2015); and Mónica Edwards-Schachter et al., "Fostering Quality of Life Through Social Innovation: A Living Lab Methodology Study Case," *Review of Policy Research* 29, no. 6 (November 2012): 672–92.

16 Pascoe Pleasance et al., "Paths to Justice: A Past, Present and Future Roadmap" (London: Centre for Empirical Legal Studies, 2013); Rebecca L. Sandefur, "Accessing Justice in the Contemporary USA: Findings from the Community Needs and Services Study," American Bar Association (2014); and Peter Chapman and Alejandro Ponce, "How Do We Measure Access to Justice? A Global Survey of Legal Needs Shows the Way," *Open Society Foundations* (March 2018).

17 Ronald E. Robertson et al., "Auditing the Personalization and Composition of Politically-Related Search Engine Results Pages," in WWW '18: Proceedings of the 2018 World Wide Web Conference (New York: ACM, 2018), 955–65.

18 Eiji Aramaki et al., "Twitter Catches the Flu : Detecting Influenza Epidemics Using Twitter," *Proceedings of the 2011 Conference on Empirical Methods in Natural Language Processing* (Edinburgh: Association for Computational Linguistics, 2011): 1568–76; Patipat Susumpow et al., "Participatory Disease Detection Through Digital Volunteerism: How the Doctorme Application Aims to Capture Data for Faster Disease Detection in Thailand," in *WWW '14 Companion: Proceedings of the 23rd International Conference on World Wide Web* (New York: ACM, 2014), 663–66; and Jeremy Ginsberg et al., "Detecting Influenza Epidemics Using Search Engine Query Data," *Nature* 457, no. 7232 (2009): 1012–14.

system who are trying to use the system through its technologies, rules, interfaces, language, and services and then to gather information from them by triggering a reflective process that can expose what their deeper needs and aspirations are. The ethnographic techniques bring thick, rich descriptions of how people currently are trying to use the legal system (or to serve others in the system) and of the possible hooks or policy changes that are called for.[21] They can produce coded interview notes, journey maps of individual users, swimlane diagrams that map out multiple stakeholders' experiences, lists of user requirements, annotated system maps prioritizing stakeholders and problems, and other artifacts to capture the status quo.[22]

Grounded theory offers a related method for collecting a variety of interviews, observations, and other data points, and using them to synthesize common patterns and themes.[23] The grounded theory qualitative approach to social science considers phenomena as perpetually changing—and it works to uncover what these conditions are, how people respond to them, and the consequences of this action. Its methodologies involve wide data collection—from interviews, observations, and secondary accounts—and then gradual development of codes, categories, relationships, and themes in this data. Insights and hypotheses are derived from a sample of on-the-ground conditions and experiences, so that the researcher (or legal designer) is grounded in these human realities when proposing what the status quo of the legal system is, the main categories of people involved, and potential next steps.[24]

A more structured, quantitative form of user need scouting can be borrowed from futurist and forecast studies, which use the *Delphi method* to source an agenda from multiple leaders. The Delphi technique involves having multiple experts react to a prompt, to forecast what they predict will happen in the future and to offer a vision for what should happen.[25] It has been used in health care for participatory agenda-setting and to structure group communication around how to solve a complex problem.[26] This forecasting method can be adapted to a wider group of stakeholders (not only legal experts) to solicit visions from more people about where they would spend resources to improve the legal system—for example, by ranking needs and opportunities and by participating in fictional games that would allocate funds to the stakeholders.[27]

Methods for Creating Exploratory Designs

In moving from the understanding of needs to the creation of new ideas and prototypes for improvement, the methodologies involve more creative, speculative, and building-focused work.

19 Margaret D. Hagan, "A Human-Centered Design Approach to Access Justice: Generating New Prototypes and Hypotheses for Intervention to Make Courts User-Friendly," *Indiana Journal of Law and Social Equality* 6, no. 2 (2018): 199–239; and Indi Young, *Mental Models Aligning Design Strategy with Human Behavior* (San Francisco, CA: Rosenfeld Media, 2008).

20 Salu Ylirisku and Jacob Buur, *Designing with Video* (New York: Springer, 2009); and Jacob Buur and Larisa Sitorus, "Ethnography as Design Provocation," in *Ethnographic Praxis in Industry Conference Proceedings* (Portland: American Anthropological Association, 2007), 146–57.

21 Corina Sas et al., "Generating Implications for Design Through Design Research," *Proceedings of the 32nd Annual ACM Conference on Human Factors in Computing Systems (CHI '14)* (New York: ACM, 2014), 1971–80.

22 Margaret Hagan, *Law By Design* (Stanford: Legal Design Lab, 2016) at http://www.lawbydesign.co/en/home/ (accessed February 20, 2020).

23 Juliet Corbin and Anselm Strauss, "Grounded Theory Research," *Qualitative Sociology* 13, no. 1 (1990): 3–21.

24 Shamal Faily and Ivan Flechais, "Persona Cases: A Technique for Grounding Personas," *CHI '11 Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (New York: ACM, 2011), 2267–70.

25 Felicity Hasson and Sinead Keeney, "Enhancing Rigour in the Delphi Technique Research," *Technological Forecasting and Social Change* 78, no. 9 (2011): 1695–1704; and Jari Kaivo-oja et al., "The Crowdsourcing Delphi: Combining the Delphi Methodology and Crowdsourcing Techniques," in *The XXIV ISPIM Conference – Innovating in Global Markets: Challenges for Sustainable Growth* (Helsinki: ISPIM, 2013), 1–18.

26 Amber Fletcher and Gregory Marchildon, "Using the Delphi Method for Qualitative, Participatory Action Research in Health Leadership," *International Journal of Qualitative Methods* 13, no. 1 (2014): 1–18.

27 Guillermo Aldunate et al., "Doing User Research in the Courts on the Future of Access to Justice," *Legal Design and*

Innovation, July 5, 2018, https://medium.com/legal-design-and-innovation/doing-user-research-in-the-courts-on-the-future-of-access-to-justice-cb7a75dc3a4b (accessed on February 20, 2020).

28 John Zimmerman et al., "An Analysis and Critique of Research Through Design: Towards a Formalization of a Research Approach," *Conference on Designing Interactive Systems* (Aarhus: ACM, 2010), 310–19.

29 John Zimmerman et al., "Research Through Design as a Method for Interaction Design Research in HCI," *CHI '07: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (New York: ACM, 2007), 493–502.

30 David V. Keyson and Miguel Bruns Alonso, "Empirical Research Through Design," *Proceedings of the 3rd Conference of the International Association of Societies of Design Research (IASDR'09): Rigor and Relevance in Design* (Seoul, Korea: IASDR, 2009), 4548–57.

31 Luma Institute, *Innovating for People: Handbook of Human-Centered Design Methods* (Pittsburgh, PA: Luma, 2012); CoLab, *Follow the Rabbit: A Field Guide to Systemic Design* (Toronto: Ryerson, 2016); and Ursula Davies and Kelly Wilson, *Design Methods for Developing Services* (London: Colaborativismo, 2013).

32 Marc Stickdorn et al., *This Is Service Design Doing* (San Francisco: O'Reilly, 2017).

33 Kimbell and Julier, "Social Design," 45–50.

34 Lucy Kimbell and Jocelyn Bailey, "Prototyping and the New Spirit of Policy-Making," *CoDesign* 13, no. 3 (July 3, 2017): 214–26; Verena Kontschieder, "Prototyping in Policy—What For?!," *Legal Design and Innovation,* October 16, 2018, https://medium.com/legal-design-and-innovation/prototyping-in-policy-what-for-c7c567d922ec (accessed February 20, 2020); and Lorenzo Allio, *Design Thinking for Public Service Excellence* (Singapore: UNDP, 2014).

35 Margaret Hagan, "Quick Takes on How to Bring Prototyping into Policy-Making," *Legal Design and Innovation,* November 15, 2018, https://medium.com/legal-design-and-innovation/quick-takes-on-how-to-bring-prototyping-into-policy-making-cc720f306d93 (accessed February 20, 2020).

The *Research Through Design* community in human-computer interaction (HCI) has established a set of grounded methodologies to create early-stage prototypes as a means to inquire into user needs and contexts.[28] Design researchers approach complex, wicked problem areas—with many different stakeholders and competing priorities—using methods that involve building new artifacts, testing them, and collaborative iteration to revise them, and through this process developing stronger theories, hypotheses, and visions of change.[29] These efforts often are long-term research projects, involving repeated investigations and multiple rounds of creation, theory-creation, and re-creation of new interventions. The design team creates testable hypotheses about how to address the defined challenge by creating early prototypes, testing them, and then revising their hypothesis and their prototype accordingly.[30]

Creating these new exploratory designs involves a wide variety of practical design methods for brainstorming, prototyping, and running early-stage testing or collaborative design reviews. *Human-centered design* toolkits offer concrete methods for running brainstorming sessions, including creative matrices, analogous research, improvisation and bodystorming, interdisciplinary brainstorms, and crowdsourced open innovation competitions.[31] *Service design* methods are of particular use in legal design, to research people's needs and system dynamics and to transform the research into new ways to provide services through technology, organizational changes, policies, visuals, and other coordinated interventions.[32] These research activities involve brainstorming to create early prototypes, like storyboards, proposed blueprints, sketches of new ideas and products, acting out new experiences and interactions, and hacking current spaces with quick new visions of what could be different.[33]

In legal design, the typical product or service design prototypes also expand to include *Policy Prototyping,* as has been established in other public service innovation methodologies.[34] This approach involves taking the sketching, building, and improvisation of more traditional early-stage prototyping to a more complex, system-level experiment on how things can be changed. A policy prototype in public service innovation involves creating visual, service, and product prototypes—in addition to prototypes of new policies—to run a series of small experiments to test what behaviors, risks, and other unexpected outcomes emerge from these changes.[35] This nascent expansion of design methods into policy-making can be used by legal designers to conduct more exploratory, pre-pilot work in how court rules, legislation, regulation, and other policies can be reformed.

Co-design supplements these generative methods by prioritizing the inclusion of a wide group of stakeholders in the brainstorming and prototyping.[36] It offers methods to expand these creative activities to more amateur community members or system leaders (who typically do not think of themselves as creative).[37] Co-design often happens in workshops in which experienced designers and developers are paired with amateur ones, but with everyone sketching, discussing, and building together. The more skilled designers and developers then begin to translate the group's vision into a refined exploratory design.[38]

The strand of methodologies around *speculative design* offers ways to explore possible interventions that may not yet be feasible, but that can help stretch the community's vision, challenge their biases, and think in longer timelines. Rather than aiming at immediate practicality (solving the problem right now), this branch of design methods encourages the generation of knowledge through the design of new interventions that are provocative, that can elicit reactions to help the design team better understand what the limits of a design space are.[39] Speculative design, sometimes called *provotyping* (rather than prototyping, for its provocative nature), is then used to have a critical conversation or co-design workshop.[40] Stakeholders thus engage with a challenging vision of what could be, and the design team can push the vision of interventions to be more ambitious, to think beyond immediate realities, and to also see what the boundaries of acceptable new interventions would be.[41]

Design pattern libraries also are a useful tool and methodology during the creation phase of legal design work. Numerous design patterns already have been proposed around specific legal objectives—particularly regarding communication of complex information via contracts, policy statements, and terms of service.[42] The pattern library is a means to facilitate the creation of new interventions based on previous vetted practices and to jumpstart effective design work. The patterns are most common in visual communication and interaction designs, although legal design also might work to expand the design pattern method into other systemic areas, to capture best practices and standard forms of service and policy innovation.

Early Evaluation of New Designs

As many concepts and prototypes emerge from the creative phase, the next set of methodologies get early, meaningful evaluation of which designs should advance to pilot. Feedback clarifies how to make them more engaging and usable, what risks and ethical concerns might emerge out of them, and how they can be refined

36 Jakob Trischler et al., "The Value of Codesign: The Effect of Customer Involvement in Service Design Teams," *Journal of Service Research* 21, no. 1 (2018): 75–100; and Sofia Hussain et al., "Participatory Design with Marginalized People in Developing Countries: Challenges and Opportunities Experienced in a Field Study in Cambodia," *International Journal of Design* 6, no. 2 (2012): 91–109.

37 Donoso et al., *Increasing User Empowerment*.

38 André Liem and Elizabeth B.N. Sanders, "The Impact of Human-Centred Design Workshops in Strategic Design Projects," in *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 6776 (Berlin: LNCS, 2011): 110–19.

39 Elizabeth B.N. Sanders, "Perspectives on Participation in Design," in *Wer Gestaltet Die Gestaltung? Praxis, Theorie Und Geschichte Des Partizipatorischen Designs* [Who Designs the Design? Practice, Theory, and History of Participatory Design] (Berlin: Transcript, 2008), 61–74.

40 Laurens Boer and Jared Donovan, "Provotypes for Participatory Innovation," in *DIS '12: Proceedings of the Designing Interactive Systems Conference* (New York: ACM Press, 2012), 388.

41 Buur and Sitorious, "Ethnography as Design Provocation."

42 Florian Schaub et al., "A Design Space for Effective Privacy Notices," in *Eleventh Symposium on Usable Privacy and Security* (SOUPS 2015) (Berkeley: USENIX Association, 2015), 1–17; Helena Haapio and Margaret Hagan, "Design Patterns for Contracts," *Internationales Rechtsinformatik Symposion IRIS* [International Legal Informatics Symposium] (Vienna: Weblaw, 2016): 381–88; and Helena Haapio et al., "Legal Design Patterns for Privacy," in *Data Protection/LegalTech: Proceedings of the 21st International Legal Informatics Symposium IRIS,* ed. Erich Schweighofer (Vienna: Weblaw, 2018), 445–50.

before being "hardened" into pilots. The methods of evaluation at this stage vary depending on the type of legal "thing" being designed. Is the intervention a new communication, product, service, organization, or policy, for example? Specific instruments can be used to evaluate these different types of prototypes, although common themes cross all areas of early-stage legal design work.

For all legal design work, the *usability* of a new innovation is a central criterion. Other public service innovation design methodologies have been developed to evaluate new communications, technology, and services based on system usability.[43] Standard surveys are available to measure system usability; they include fewer than 10 survey questions to reliably elicit feedback from possible users of a new prototype about whether the thing makes the system more or less usable for them.[44] These usability surveys also can begin to measure whether stakeholders' experience and confidence with the new prototype will be positive. Usability studies look at ease of learning a new intervention, efficiency of using it, and the speed and accuracy in performing tasks with it.[45] Beyond usability, other government technology researchers also have developed research methods to gauge technology acceptance, motivational models to gauge people's motivation for using new interventions, and other measures to determine how to roll out new interventions that will affect whether and how people use them.[46]

Procedural justice is another area for legal design evaluation. Even if a prototype makes the legal system more usable, does it also improve people's sense of being treated with respect and dignity within the system? Does it improve their sense of confidence in their ability to interact with the government, and their sense of faith in the government's effectiveness and rule of law? Procedural justice instruments, developed primarily in relation to police–citizen relationships, can be useful to legal designers.[47] They are short surveys that ask respondents about their relationship with a government institution and can be adapted to evaluate a proposed new intervention: Would this new thing improve or exacerbate the procedural justice factors?[48]

Related to the justice measures are methods to measure *Design for Dignity.* These instruments, mainly taken from the study of health care (particularly end-of-life palliative care), measure indicators of people's experiences, confidence, and perceived control in a system.[49] Dignity often is measured using the concept of "perceived control," in which users' experience measures are not only about happiness and satisfaction, but also about their sense of being treated with care, their knowledge of the complicated system, and their confidence that they have quality choices and

43 Zhao Huang and Laurence Brooks, "Usability Evaluation and Redesign of E-Government: Users' Centred Approach," in *Recent Advances in Computer Science and Information Engineering: Lecture Notes in Electrical Engineering,* eds. Z. Qian et al. (Berlin: Springer, 2012): 615–25; Lili Wang et al., "Evaluating Web-Based e-Government Services with a Citizen-Centric Approach," in *38th Hawaii International Conference on System Sciences* (Big Island, HI: IEEE, 2005): 1–10; and Cora Sio Kuan Lai and Guilherme Pires, "Testing of a Model Evaluating E-Government Portal Acceptance and Satisfaction," *The Electronic Journal of Information Systems Evaluation* 13, no. 1 (2010): 35–46.

44 Aaron Bangor et al., "An Empirical Evaluation of the System Usability Scale," *International Journal of Human–Computer Interaction* 24, no. 6 (July 2008): 574–94.

45 Hyewon Suh et al., "Developing and Validating the User Burden Scale," in *CHI '16: Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (New York: ACM, 2016), 3988–99.

46 Ben-Tzion Karsh, "Beyond Usability: Designing Effective Technology Implementation Systems to Promote Patient Safety," in *Quality and Safety in Health Care* (Madison, WI: BMJ Publishing Group, October 2004), 388–94.

47 Jason Sunshine and Tom R. Tyler, "The Role of Procedural Justice and Legitimacy in Shaping Public Support for Policing," *Law & Society Review* 37, no. 3 (September 1, 2003): 513–48; Tom R. Tyler, "Procedural Justice and the Courts," *Court Review: The Journal of the American Judges Association* 44, no. 1/2 (2007): 26–31; Roger K. Warren, "Public Trust and Procedural Justice," *Court Review* (Fall 2000): 12–16; Steve Leben, "Procedural-Fairness Movement Comes of Age," *Trends in State Courts* (Williamsburgh, National Center for State Courts, 2014), 59–62; and Margaret Hagan and Miso Kim, "Design for Dignity and Procedural Justice," in *AFHE 2017: Advances in Affective and Pleasurable Design,* eds. W. Chung et al. (Berlin: Springer, 2018):135–45.

an ability to act.[50] Researchers studying technology use among vulnerable populations, like the homeless and refugees, have also developed methods to evaluate dignity-related outcomes when testing new interventions.[51]

In addition to quantitative feedback surveys, more qualitative, interactive, and generative *open-ended design testing sessions* can let design teams gather stakeholders' reactions, observe their interactions with the prototype, and elicit new re-designs from them. The testing sessions become more like a workshop, in which respondents can sketch changes, interpret the prototype to work in the ideal way for them, and improvise how they would use the thing in practice. Open-ended testing sessions are less about getting a definitive evaluation of a project's value, and more about leading to a next version of the prototype, with a gradual refinement of the hypotheses and details of the intervention. These sessions also can take place in context—where the design team places the prototype in the field to observe whether people notice it, engage with it, know how to use it, and to see how they interact with it.[52]

Lab testing of more discrete new interventions—such as new legal documents, technologies, or visuals—also can be useful to rank different versions of a new prototype and to refine a vision of the details and composition that must engage and inform stakeholders. Especially with legal design work, where many interventions involve making complex and intimidating things more approachable and actionable, lab tests can help design teams identify what patterns, interactions, and communication techniques are most promising. Lab evaluations simulate how a person might encounter a new legal communication or product; have the person try to use this prototype; and then have them recount their experience, rank the prototype on a number of predefined factors, and propose iterations to refine it.[53] If the legal design work is a new *visual communication,* then standard instruments can be used to empirically measure the prototype in terms of its ability to "perform" for users. Measurements can include speed of comprehension, accuracy of comprehension, and positive user experience.[54]

If the prototype is more of a *civic technology or service,* some outcome measurements from an early field run might also include the number of people who engage with the technology, those who return to it, and those who recommend it to others.[55] Other possible measurements in the short term—to show the performance of the technology—include the number of bugs, breakdowns, or levels of attrition.

48 Tom R. Tyler, "What Is Procedural Justice?: Criteria Used By Citizens to Assess the Fairness of Legal Procedures," *Law & Society Review* 22, no. 1 (1988): 103–36.

49 Mariska G. Vlug et al., "The Development of an Instrument to Measure Factors That Influence Self-Perceived Dignity," *Journal of Palliative Medicine* 14, no. 5 (May 2011): 578–86.

50 Beth Arburn Davis, "Development and Validation of a Scale of Perceived Control Across Multiple Domains," (PhD diss., Philadelphia College of Osteopathic Medicine, 2004).

51 Christopher A. Le Dantec and W. Keith Edwards, "Designs on Dignity: Perceptions of Technology on the Homeless," in *CHI '08 Proceedings: Design in Dignity* (New York: ACM, 2008), 627–36; and Asam Almohamed and Dhaval Vyas, "Designing for the Marginalized: A Step Towards Understanding the Lives of Refugees and Asylum Seekers," in *DIS 2016 Companion: Proceedings of the 2016 ACM Conference on Designing Interactive Systems* (New York: ACM, 2016), 165–68.

52 Bilge Mutlu and Jodi Forlizzi, "Robots in Organizations: The Role of Workflow, Social, and Environmental Factors in Human-Robot Interaction," in *Human-Robot Interaction (HRI), 2008 3rd ACM/IEEE International Conference On Human–Robot Interaction* (New York: ACM, 2008), 287–94.

53 Kleimann Communication Group, *Know Before You Owe: Evolution of the Integrated TILA–RESPA Disclosures* (Rockville, MD: Consumer Financial Protection Bureau, 2012); Pedro Giovanni Leon-Najera, "Privacy Notice and Choice in Practice," (PhD diss., Carnegie Mellon University, 2014); Stefania Passera, "Enhancing Contract Usability and User Experience Through Visualization: An Experimental Evaluation," *16th International Conference on Information Visualization* (Washington, DC: IEEE Computer Society, 2012); Aleecia M. McDonald et al., "A Comparative Study of Online Privacy Policies and Formats," in *International Symposium on Privacy Enhancing Technologies Symposium,* eds. Ian Goldberg and Mikhail J. Athallah (Berlin: Springer, 2009): 37–55; Omri

More work needs to be done in the legal design community to produce a standard set of metrics around early-stage legal design prototypes. The instruments used to assess the different visual, technological, service, organizational, spatial, or policy designs might differ, depending on these different forms. Still, a consistent set of factors could be prioritized. A draft of these legal design testing metrics might include the following features:

1. *Usability*: Does the thing improve people's ability to use the legal system, and their sense of a positive experience while doing so?
2. *Procedural justice*: Does it enhance users' sense of procedural justice—that the legal system is fair, transparent, and "for them"?
3. *Engagement*: Does the thing affect people's willingness to engage with legal tasks—to use the legal system to resolve problems and to do the tasks within the system?
4. *Legal capability*: Does the thing improve people's ability to efficiently, sufficiently understand the complex legal information needed to deal with the system? Does the thing help them to figure out how the law applies to their specific situation, and enable them to make an informed, actionable decision?
5. *Resolution*: Does the thing help people to resolve a problem, to protect their interests, and to achieve a positive outcome for themselves (and those around them)?
6. *Administrative burden*: Does the thing significantly reduce the amount of time and money that people must spend to complete the tasks in the legal procedure and get to a resolution?

Building a Stronger Methodology for a Full Cycle of Legal Design

The methodology of legal design can draw from a variety of social science, design, and computer science fields to create new strategies for reform, as well as to measure and evaluate new interventions before scaling them and advocating for widespread policy change. These literatures include HCI, research through design, applied ethnography, procedural justice, open innovation, and agile governance.

The pieces that follow in this volume give more examples of how legal design is being made into a coherent discipline, and how it is being brought into the reform of court systems, data protection policy-making, community justice, housing rights, and beyond. As

Ben-Shahar and Adam Chilton, "Simplification of Privacy Disclosures: An Experimental Test," *The Journal of Legal Studies* 45, no. 2 (2016): S41–67.

54 Stefania Passera, "Flowcharts, Swimlanes, and Timelines: Alternatives to Prose in Communicating Legal–Bureaucratic Instructions to Civil Servants," *Journal of Business and Technical Communication* 32, no. 2 (2018): 229–72.

55 Knight Foundation, "Assessing Civic Tech: Case Studies and Resources for Tracking Outcomes," March 2015, at www.networkimpact.org.

further work is done to bring a design approach into the various areas of law, communities need a sustained effort to refine methods for later in the cycle, as well as to better evaluate and supplement the methods listed here.

Past the exploratory part of the design work, when prototypes harden into pilots, more work is needed to identify methods that can take the creative, experimental design approach into the stricter, more controlled field trials. A crucial missing part of many legal design efforts currently is the pre-trial and pre-pilot field testing. In this phase of going from lab tests to field tests, there is a need for "soft trial" tests which involve actual human behavior, but which do not lock the solution into a final version. After this field run, then traditional social science evaluations using observational trials and randomized controlled trials can be used to determine how the interventions perform. As empirical legal studies as a field grows, and as more trials occur in the legal system, legal design can become integrated in this work and better create and vet new interventions to be piloted. Legal design thus can generate knowledge about what things can best improve people's outcomes and experiences in the legal system.[56]

Legal design also can become integrated into the field of behavioral science. As behavioral labs experiment with nudges and heuristics to see how small interventions can drive better, evidence-based policymaking, legal design can borrow their methods and integrate them into their exploratory design work, as well as their lab and field evaluations.[57] When legal design focuses on getting to widespread influence, then literature on innovation diffusion, borrowed from management science and health care, can provide methodologies for understanding both strategies and evaluations for scaling and replicating new interventions.[58]

In future research, legal design practitioners and researchers must also define what long term indicators of their work's impact might be, and use participatory processes to do so. Some indicators could be around people's quality of life after having a legal problem, including their poverty levels, community health, levels of violence, faith in the government, mental health, stability of housing, payment of taxes, children's attendance of schools, economic productivity, and willingness to use the courts and other legal services. Greater methodological work on long-term justice outcomes can help tie legal design work into policy-making and anti-poverty efforts beyond the justice system that can demonstrate a wider purpose of legal innovation for society.

56 D. James Greiner and Andrea Matthews, "Randomized Control Trials in the United States Legal Profession," *Annual Review of Law and Social Science* 12, no. 1 (February 2, 2016): 295–312.

57 Richard H. Thaler and Will Tucker, "Smarter Information, Smarter Consumers," *Harvard Business Review* 91, no. 1 (2013): 44–54; and Alexandra Fiorillo et al., *Applying Behavioral Economics to Improve Microsavings Outcomes* (Cambridge, MA: ideas42, 2014).

58 James W. Dearing and Jeffrey G. Cox, "Diffusion of Innovations Theory, Principles, and Practice," *Health Affairs* 37, no. 2 (February 5, 2018): 183–90; and Karsh, "Beyond Usability."

The Rapid Embrace of Legal Design and the Use of Co-Design to Avoid Enshrining Systemic Bias

Dan Jackson, Miso Kim,
Jules Rochielle Sievert

Introduction

After great delay, the U.S. legal profession and its many institutions are beginning to embrace digital technology and the value of its many applications in the delivery of both criminal and civil justice.[1] Accordingly, and despite being deliberately designed to adapt slowly to change, law and legal institutions even find themselves the objects of interest and investment by the typically disruptive forces of Silicon Valley venture capital and creative technologists.[2] Most recently, state and local courts have adopted a welcoming stance to these interventions, signaling their intention to leverage digital technology not only to achieve organizational efficiency, but also to deliver their core product: justice—especially as it relates to the challenging task of assessing risk.[3]

As the embrace of digital technology finally begins, nearly every significant component of our U.S. justice system (including law schools, law firms, courts, and other major civic institutions, like local government entities) also is enthusiastically engaging with design methods as a means of achieving both incremental and radical change. All of this shifting is remarkably new and is intrinsically linked together. Digital technology meaningfully applied within U.S. legal institutions goes no further back than 30 to 40 years.[4] Legal design, as a discipline, has been around less than a decade.[5] In both instances, our legal institutions—from law schools to courts to law firms—are beginning to quickly embrace novel solutions and methods, which is a significant shift from the relative conservatism and resistance of the recent past. This change is a very welcome one. Legal designers and technologists have every reason to be excited about this moment because our core institutions and organizations display a refreshing willingness to engage with the methods and tools about which they have been proselytizing for many years.

1 See, e.g., COMPAS Core, "COMPAS CORE Risk/Needs Assessment and Case Planning," Northpointe (website), http://www.northpointeinc.com/files/downloads/Risk-Needs-Assessment.pdf (accessed April 16, 2019); Rebecca L. Sandefur, "Legal Tech for Non-Lawyers: Report of the Survey of U.S. Legal Technologies," American Bar Foundation (website), http://www.americanbarfoundation.org (accessed February 19, 2020); and The National Center for State Courts Joint Technology Committee (website), https://www.ncsc.org/About-us/Committees/Joint-Technology-Committee/Publications-and-Webinars.aspx (accessed July 1, 2019).

2 See, e.g., Paladin (website), "The Infrastructure for Pro Bono Champions," https://www.joinpaladin.com/ (accessed April 15, 2019). See also Ari Kaplan, "Law Firms Are Investing in Innovation Through Venture Capital Services," ABA Journal (website), http://www.abajournal.com/news/article/law-firms-investing-in-innovation-through-venture-capital (accessed February 19, 2020).

3 Chelsea Barabas et al., "Interventions over Predictions: Reframing the Ethical Debate for Actuarial Risk Assessment," *Proceedings of Machine Learning Research* 81 (2017): 1–15. http://arxiv.org/abs/1712.08238.

4 To illustrate, Capstone Practice Systems, offers expertise in systematizing complex know-how into easy-to-use practice tools. The firm's principals bring more than 35 years of collective experience in building digitalized systems. (See http://www.capstonepractice.com/why-capstone.) Similarly, LegalZoom was founded in 2000 in an effort to empower Americans to take care of common and

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A notable difference exists, however, between the embrace of digital technology and the embrace of design methods in the law. Digital technology has taken several decades to gain a meaningful foothold; design methods (beyond those used to generate technology solutions) are getting traction after just over five years. What accounts for this difference, beyond the necessary maturation of digital tools and concomitant reduction in cost? And what risks, if any, emerge in the rapid embrace and deployment of the very new methods of legal design? We propose answers to both questions in this paper.

We found the answer to our first question—regarding the sudden view of legal design as advantageous—by examining the ostensibly disparate fields of design and law through the lens of rhetoric. Through this lens, we discovered that a deliberately human-centered approach to law—one that integrates design thinking, rhetoric, and justice—helps to explain the ease with which our justice system has taken up design methods. By drawing parallels between the rhetoric of law and the rhetoric of design, and informed by the practical experience we have gleaned in seven years of operations at the NuLawLab at Northeastern University School of Law, we can demonstrate the foundational equivalencies between the two fields and thus explain one perspective on the rapid uptake of legal design.

Regarding the second, more urgent, question about risks, the primary risk of rapid adoption could not be clearer. If we do not critically examine and correct the foundations, methods, and outcomes of the legal design process with enough care, we simply will enshrine long-standing racial and economic bias in a shiny new technologic or process wrapper.[6] As redesign efforts are evaluated, many critics have noted the insufficient attention being paid to the bias and inequity that are deeply embedded in the justice systems.[7] In particular, critics have targeted the use of risk assessment algorithms to determine whether someone should be held in jail before trial. More generally, critics point to the bias and inequity in the legal technology and legal design movements themselves.[8] This argument is not new. Since the inception of both legal technology and legal design, leading thinkers and practitioners have warned about the risk that these new systems and ideas, if not carefully considered, will merely ensconce existing bias and prejudice. This warning mirrors a similar critique underway in design education.

After examining these two questions, we conclude our article by proposing that a radical iterative effort, deliberately structured to address systemic bias, has the strongest potential to

basic legal needs in an easy and affordable way. LegalZoom is now the nation's top online legal document company (https://www.legalzoom.com/). See also Conference of State Court Administrators, "Position Paper: The Emergence of E-Everything" (2005), https://cosca.ncsc.org/~/media/Microsites/Files/COSCA Policy%20Papers/E-EverythingPositionPaperApproved-Dec05.ashx.

5 Margaret Hagan began blogging about the concept of legal design in the 2011–2012 timeframe, with the launch of Open Law Lab (http://www.openlawlab.com/). The NuLawLab, formed in 2013 as an interdisciplinary laboratory at the Northeastern University School of Law, is working to imagine, design, test, and implement pioneering approaches to legal empowerment (https://nulawlab.org/).

6 See, e.g., Michelle Alexander, "The Newest Jim Crow," *New York Times,* November 8, 2018.

7 See, e.g., COMPAS Core, "COMPAS CORE Risk/Needs Assessment." See also Kimberle Crenshaw et al., "Introduction" in *Critical Race Theory: The Key Writings That Formed the Movement* (New York: The New York Press, 1995), xiii–xxxii.

8 See Creative Reaction Lab (website), www.creativereactionlab.org; and Sasha Costanza-Chock et al., "#MORETHANCODE: Practitioners Reimagine the Landscape of Technology for Justice and Equity," Research Action Design and Open Technology Institute (website), https://morethancode.cc/T4SJ_fullreport_082018_AY_web.pdf (accessed February 19, 2020).

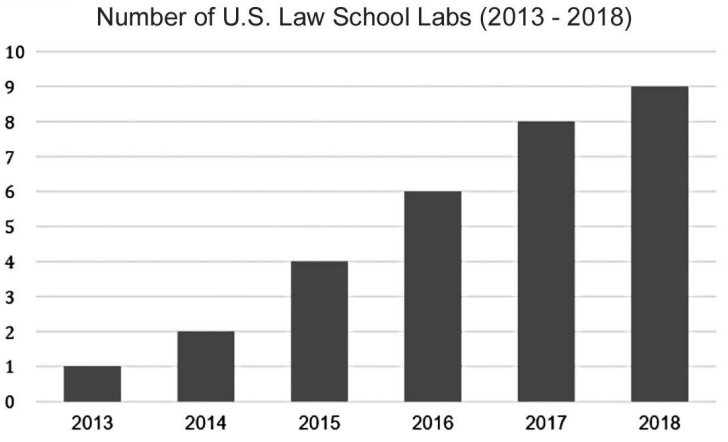

Figure 1
Number of Legal Design Labs at U.S. Law Schools, 2013–2018.

deliver on the promise of both design and justice, and thus on the emerging transformative potential of the nascent legal design movement. Such an approach has the greatest potential to productively deconstruct systemic bias by capitalizing on design's inherent strengths, while at the same time delivering on the core promise of impartial justice.

A Brief History of Legal Design in the United States

Legal design, for all its current buzz, remains a relatively new concept, at least in the United States.[9] Only seven years ago, Margaret Hagan launched her Open Law Lab blog and Northeastern University School of Law staffed its NuLawLab.[10] However, since this time, the concept has been rapidly embraced. Initially, this development was most manifest in legal academia, as indicated in Figure 1.[11] More recently, commercial law firms and government agencies also have begun deploying design methods as a means to innovate in the realms of legal representation and municipal policy and program development and implementation.[12]

The latest, and perhaps most surprising, entrants to this space are the state and local courts, which have been handling a genuine crisis of self-representation for several decades.[13] The justice community has responded with, among other things, a significant and very creative expansion of resources for unrepresented litigants.[14] Nevertheless, the current system was designed for a reality that no longer exists and has not existed for quite some time. That reality assumes a lawyer for every party to litigation—an interpreter between the interests of the client and the power of the court.

State civil courts are beginning to explore legal design methods as one means of facing this new reality and re-engineering long-standing systems to make them more responsive to a context

9 Carsten Reimann, "My Brief History of Legal Design," LinkedIn (website), May 28, 2018, https://www.linkedin.com/pulse/my-brief-history-legal-design-carsten-reimann/.

10 We have chosen these two events as early markers in the application of design thinking within the American legal academy. While many early legal technologists were also adept designers, it was not until Ms. Hagan began proselytizing the power of design in law that the field began to take shape. Our NuLawLab was the first staffed legal innovation lab at a U.S. law school, commencing staffed operations in April, 2013.

11 These labs are NuLawLab at Northeastern University School of Law: www.nulawlab.org (2013); Stanford Legal Design Lab: www.legaltechdesign.com (2014); Michigan State Legal RnD Lab: www.msu.edu/lawtech/legal (formerly Reinvent Law Laboratory); The Law Lab, Illinois Tech Chicago-Tech College of Law: www.thelawlab.comrnd-lab.html (2015); Suffolk Law SchooL LIT Lab: www.suffolklitlab.org; Harvard A2J Lab: www.a2jlab.org (2016); Brigham Young University: Law X/Legal Design Lab: www.law.byu.edu/clinics-andcenters/lawx/; Innovation for Justice, University of Arizona School of Law (2017); and Vanderbilt Law & Innovation Program: https://law.vanderbilt.edu/academics/academic-programs/law-and-innovation/ (2018).

12 To illustrate, Seyfarth Shaw, LLP, employs a chief strategy officer who is responsible for driving growth in a manner that generates measurable value for the firm's clients. From 2014–2018 this role had been filled by Josh Kubicki who, as founder and advisor of the Legal Transformation Institute, LLC, had previously focused on launching and growing new businesses in legal markets, from idea or concept to profitability. In the government sector, examples include the City of Boston Housing Innovation Lab (https://www.boston.gov/departments/new-urban-mechanics/housing-innovation-lab) and its Office of New Urban Mechanics (https://www.boston.gov/departments/new-urban-

mechanics), and at the federal level, The Lab at the Office of Personnel Management (https://lab.opm.gov/).

13 Self-representation or pro se legal representation in the United States is when individuals advocate on their own behalf before a court or a tribunal, rather than being represented by an attorney.

14 See, e.g., RePresent (website), https://www.representgames.org/.

15 In civil cases, private parties bring claims, and the cases generally result in monetary damages or orders to do or not to do something. Criminal cases always allow for trial by jury, and the plaintiff is always a state or the federal government.

16 Natalie Anne Knowlton et al., "Listen> Learn> Lead: A Guide to Improving Court Services Through User-Centered Design," the Institute for the Advancement of the American Legal System (website), https://iaals.du.edu/sites/default/files/documents/publications/listen-learn-lead_improving_court_services.pdf (accessed April 10, 2019).

17 See NuLawLab, "Redesigning Housing Court," NuLawLab Project, https://www.nulawlab.org/projects/redesigning-housing-court and Massachusetts Housing Court Department, "Fiscal Year 2018 Statistics," October 2018, https://www.mass.gov/files/documents/2018/10/01/2018 %20 Housing%20Court%2 Self-Represented-Represented%20Litigants%20by%20 Court%20Location.pdf. In 2017 New York City passed a city ordinance creating the first right-to-counsel law in the country; tenants facing eviction in housing court or in certain administrative hearings have a right to counsel if their income is less than 200 percent of the federal poverty guideline. Legal help and access to the right resources before a court eviction can prevent families from homelessness, prevent illegal or unnecessary evictions, prevent displacement, and create a path to housing stability. Massachusetts has formed its own Right to Counsel movement, led by the Massachusetts Right to Counsel Coalition, and three bills have been filed for the 2019–2020 session that would enact a right to counsel in eviction proceedings.

18 James Boyd White, *Heracles' Bow: Essays on the Rhetoric and Poetics of the Law* (Madison, WI: University of Wisconsin Press, 1989).

in which most litigants are not represented by lawyers.[15] For example, in the 2018 Court Compass project, four state court systems (Massachusetts, Colorado, Iowa, and North Carolina) explored the application of human-centered design as a means of generating more user-friendly processes and forms in divorce and custody cases.[16] Massachusetts is ready to deploy design methods to tackle a fundamental redesign of its housing court system, which handles more than 75,000 summary process eviction cases per year, and in which 64 percent of the litigants do not have a lawyer.[17] Given the intentional conservatism of our legal institutions, these developments in such a short period of time are remarkable.

Design, Law, and Rhetoric: Four Perspectives

How can we explain this relatively rapid embrace of legal design in the United States? We think one answer can be found by examining the constructs of design and law through the lens of rhetoric.

As a system of rules, law is often considered an objective backbone structure for our system of justice. It is purposefully slow to change so that people and institutions can have present certainty about future outcomes. Certain principles are quite fixed. For example, certain notions of contract law have been in place for hundreds of years. Change in the law takes place slowly over time, and with great nuance, so that people know what the rules are, and they can reasonably expect these rules to be consistent in the future. However, this stability, which is so valuable to our economic order, at the same time supports colonial structures and resists adaptation, thereby entrenching inequalities in access to justice. These inequalities can be seen in the ways women of color in the United States are treated by ostensibly neutral judges. In contrast, design enshrines continual change as a means of addressing a particular user and situated problem. Design takes a primarily grassroots approach of listening to, and seeking to understand, people who use the system and then creating or recreating the system based on the users' need and social values—which are always subject to change over time and context. What, then, is the basis of a productive collaboration between these two fields? We describe four elements in the following paragraphs.

Unrelated Except as Rhetoric

The first element about the relationship between design and law is that they are seemingly unrelated. However, we propose that these two systems (law and design) share a common origin—that is, the art of rhetoric. The Greek philosopher and rhetorician Gorgias defined rhetoric as "the art of persuading the people about matters of justice and injustice in the public places of the state."[18]

Using this definition, rhetoric has been one important aspect of the art of justice practiced by lawyers and politicians. James Boyd White, the founder of the Law and Literature movement, supports this view, arguing that "law is most usefully seen not... as a system of rules, but as a branch of rhetoric [and] ...as the central art by which community and culture are established, maintained, and transformed."[19]

Design is roughly defined as "planned making and doing," involving techne (knowledge particular to making).[20] Design philosopher Richard Buchanan proposes that one origin of design as a "new liberal art of technological culture" can be found in rhetoric as an integrative art in the ancient world.[21] Rhetoric is the art of discovery, invention, and creativity. It provides the basis for systematic forethought in the distinct form of words. However, the practice of rhetoric can be applied to any medium, including visual and material means. A vast part of such activity takes place in the forethought, or planning, by which knowledge is organized through the process of moving toward the ultimate production of a persuasive argument, with constant consideration for the user or the audience in the end.[22] With this systematic way of organizing thought and action, rhetoric has been considered one of the indispensable human arts from the pre-Socratic period through the middle ages and renaissance.

Related as Opposites

The advent of scientific rationality in the seventeenth and eighteenth centuries diluted rhetoric's significance as an integrative humanist art. It was reduced to the art of style: from inventio (the discovery of solid argument) to elocutio (eloquence).[23] For example, philosopher John Locke viewed rhetoric as "artificial and figurative," in that it appeals to passion rather than logic, therefore misleading the judgment.[24] This historical shift also influenced the study of law. As the shift resulted in a distinction between fact and value, justice was confined to the domain of "unchanging" while rhetoric (and thus design) was confined to "changing." In this role, the latter often has been considered to be a stylish wrapper of factual knowledge that was derived from the unchanging system of law. Our second view of the relationship between law and design comes into focus at this intersection: law as fact (unchanging) and design (and rhetoric) as embellishment (changing). We see the law as fixed and design as flexible.

Interface and Technological Development

Our third perspective on the relationship between design and law is informed by the advent of digital technology in the twenty-first century, with a particular emphasis on sectors of the legal system

19 James Boyd White, "Law as Rhetoric, Rhetoric as Law: The Arts of Cultural and Communal Life," *The University of Chicago Law Review* 52, no. 3 (1985): 684–702.

20 Carl Mitcham, "Ethics into Design," *Discovering Design: Explorations in Design Studies* (Chicago, IL: University of Chicago, 1995): 173–89.

21 Richard Buchanan, "Wicked Problems in Design Thinking," *Design Issues* 8, no. 2 (Spring 1992): 5–21.

22 Richard Buchanan, "Rhetoric, Humanism, and Design," *Discovering Design: Explorations in Design Studies* 23 (1995): 23–66.

23 Wayne C. Booth, *The Rhetoric of Rhetoric: The Quest for Effective Communication* (Hoboken, NJ: John Wiley & Sons, 2009).

24 Edward P. J. Corbett, "John Locke's Contributions to Rhetoric," *College Composition and Communication* (1981): 423–33.

incorporating digital technology. In this emerging perspective, design begins to gain importance in law as an interface that humanizes technology to better mediate between the law and citizens. Still, using James Boyd's implied understanding of law as a "machine acting on the rest of the world" and the rest of the world as "the object upon which the machine acts," design can be seen as a method or tool to support lawyers and lawmakers as the distributors of the knowledge archived in the system of law. Technology becomes an efficient means of distribution. The products born from this approach work for problem-solving around information dissemination. However, they risk being short-lived if the role of legal design stays at the level of the interface and does not address the foundational issues that are pervasive in our legal systems.

The Special Case

Our fourth view of the design/law relationship proposes to tackle these more foundational issues. As originally conceived, rhetoric was considered a civic art of community deliberation—one that integrated what we understand today as law and design, among other things. For example, Cicero saw rhetoric as a fundamental art for human collaboration and civilization. He argued that eloquence without wisdom can be harmful, yet wisdom without eloquence has no social influence. He defined rhetoric's subject matter as a "special case" and an indeterminate situation "which contains in itself a controversy to be resolved."[25] In Cicero's original conception, rhetoric is a participatory art applied to resolve controversy and to make a collective decision for the common good. This approach enables people to efficiently demonstrate their views and to agree on collective action through persuasion. Such a definition could easily be applied to various forms of contemporary legal and design processes.

The term "persuasion," which is commonly found in any definition of rhetoric, including that of Aristotle and Cicero, refers not only to the technique of convincing decision-makers in adjudicatory proceedings, but also to a broader system of discourse on public matters that regards justice in the past, present, and future.[26] Although persuasion has been overlaid with a negative nuance of manipulation in our time, it remains a system of public discourse that can provide audiences with possible courses of action. This view positions rhetoric as a systematic way to support civic life. Viewed this way, the art of rhetoric has the potential to mediate between people and our system of justice, which has become isolated "behind the bar," and thus to empower people for civic and legal autonomy.[27]

25 Marcus Tullius Cicero, "De invention. De optimo genere oratorum. Topica" [On Invention. The Best Kind of Orators. Topics.], Loeb Classical Library Vol. 386, 1949).

26 Aristotle divided rhetoric into three branches: judicial oratory (forensic); epideictic oratory (ceremonial or demonstrative); and deliberative oratory (or legislative). Each branch deals with justice for what happened in the past, what is happening now based on the current value system regarding justice, and what will be the just action for the future.

27 See, e.g., Tania Bruguera, "Reflexiones sobre el Arte Útil," [Reflections on Useful Art] in *Arte Actual: Lecturas para un espectador inquieto* [Current Art: Readings for a restless viewer], eds. Yayo Aznar and Pablo Martinez (Madrid: CA2M Centro de Arte Dos de Mayo, 2012), 194–97.

This holistic perspective of rhetoric as the art of public deliberation suggests the value of considering changing and unchanging, or progress and conservatism, as inseparable concepts. This fourth view also suggests the productive direction that a human-centered approach to law can take—one that has an integrated perspective that is open to considering design thinking, rhetoric, and justice together. Design and law both concern how to improve people's experience of systems.[28] Law forms the ideas or constructs by which people are organized to live and work together, and so can design. Distribution and procedure are key aspects in both of these processes, and together design and law explore "concrete integrations of knowledge that will combine theory with practice for new productive purposes."[29]

If we understand law from this human-centered perspective (which law inherently is, we argue), our system of justice is also fluid. The system's persuasive legal arguments and the community realities in which they are applied are constantly in flux. As currently experienced by most U.S. citizens, law is a system of use—much more so than a system of rules.[30] This conception shifts the focus of reform beyond the content in the archive of knowledge to include justice as a social activity. Reform efforts can focus not just on the laws on the books, but also on law in action. Proof of the reality of and need for this broader perspective can be seen in the continuous social discussion about access to justice in the current context. It is seen on the actual streets of Hong Kong and the virtual streets of the United States.

We think this human-centered understanding of law—our fourth view—helps to explain the rapid uptake of legal design by legal institutions organized deliberately to resist change. The law has always been, at its core, a human-centered undertaking. Its ultimate focus is on mediating human conflict and influencing human behavior. The rise of the access to justice movement, which itself was rapidly embraced by state courts across the country, emphasizes the need for Buchanan's "new productive purposes"—the valuable joint effort of co-design—on a large scale. Our experiences to date in legal design suggest that the methods show promise for generating Cicero's "collective decisions for the common good."

An Illustration of the Fourth View: The NuLawLab as a Law School Design Lab

To illustrate the application of this fourth rhetorical view of design and law, we offer the experience and recent outcomes of our NuLawLab, which originated seven years ago at Northeastern University. The Lab emerged from the clinical movement in legal education and experiential education, and it has evolved to

28 Margaret Hagan and Miso Kim, "Design for Dignity and Procedural Justice," in *Proceedings of International Conference on Applied Human Factors and Ergonomics* (Springer, 2017), 135–45.

29 Richard Buchanan, "Wicked Problems in Design Thinking," *Design Issues* 8, no. 2 (Spring 1992): 5–21.

30 As a reference, consider the concept of "law in action," through which the law is examined not just via abstract concepts, but also, and more importantly, as it actually relates to the lived experience of people. See, e.g., https://en.wikipedia.org/wiki/Law_in_action (accessed July 2, 2019).

embrace a deliberately expansive application of design and other creative methods to address issues in the justice system. Our experience to date affirms the fit between the fields of law and design, both in terms of process and productivity.

The NuLawLab draws from a tradition in clinical pedagogy at the law school. Law school clinics, including Northeastern's place students in legal practice, often with a focus on access to justice. In effect, the crisis involving access to justice provides the material around which a clinical curriculum can be built for empowering future lawyers committed to full access to justice for all.[31] Many clinical programs "also seek to improve access to justice with innovative schemes, through various types of law reform activities, legal incubator programs, and, most importantly, by instilling in future lawyers a greater sense of public responsibility," notes Bloch.[32]

Even the relatively tight confines of the American Bar Association's law school accreditation standards leave room for experimentation in legal pedagogy. According to Sameer Ashar, a clinical law professor:

> [At] the margins of the field, a growing number of law school clinics and innovative legal advocacy organizations have played a key role in developing a new public interest practice. These lawyers and law students support and stimulate radical democratic resistance to market forces by developing litigation, legislative, and community education methods aimed at advancing collective mobilization.[33]

These efforts envision the law school environment as a more transformational space, in which "the clinic would become a center of activity in the community, a place where organizers and collective members interact with each other, build alliances, or mediate disputes (that seem inevitably to arise in progressive work)."[34] Seen this way, legal education offers tremendous promise as a site of creativity. And as more traditional law school clinics morph into innovation labs, they might very well start to "reinvent law and law practice in positive ways that could simply not be envisioned without the freedom provided by the "change lab" methodology—developing new modes of legal outreach and education, and even redesigning law itself."[35]

The Pedagogy of a Law School Design Lab

What does this lab look like in practice? Soon after the inception of the NuLawLab, we began teaching a course called Laboratory Seminar in Applied Design and Legal Empowerment. This limited-enrollment, three-credit, six-week intensive seminar exposes law

31 Frank S. Bloch, "Access to Justice and the Global Clinical Movement," *Washington University Journal of Law and Policy* 28 (2008): 111–39, https://openscholarship.wustl.edu/law_journal_law_policy/vol28/iss1/6/.

32 Bloch, "Access to Justice," 112.

33 Sameer Ashar, "Law Clinics and Collective Mobilization," *Clinical Law Review* 14 (2008): 355–414, http://academicworks.cuny.edu/cl_pubs/191.

34 Ashar, "Law Clinics and Collective Mobilization," 357.

35 Martha F. Davis, "Institutionalizing Legal Innovation: The (Re)Emergence of the Law Lab," *Journal of Legal Education* 65 (2015): 190.

students to the rigorous application of design principles in the development of new models for delivering legal information, services, or related products.[36] Students critically explore and apply problem-solving methodologies derived from the fields of product and systems design, as well as related practices, such as Arte Útil, as they apply them to a specific legal problem.[37] Students work together as a team to take an idea from brainstorm, to abstract idea, to tested prototype. The class is meant to be practical, and the teaching team strives to partner students with an outside organization to develop a real solution.

For example, our Winter 2019 seminar partnered with both the Massachusetts Probation Service and Suffolk Law School's Legal Innovation & Technology Lab.[38] Students and partners crafted a smartphone application that allows probation officers to easily locate and secure treatment beds for individuals involved in the criminal pre-trial and sentencing process. In Fall 2018, the team of 14 (8 law students and 6 arts, media and design students) developed materials that would be used by law students volunteering to prepare refugees from Central America for credible fear interviews at the southern U.S. border as part of the process of applying for asylum. Our Winter 2017 seminar partnered with the City of Boston's Office of Housing Stability to identify ways to educate the public about the legal rights of tenants and landlords, before a housing crisis occurs. The result was a portfolio of options that included a radio jingle, bus and subway advertisements, and converting the "City Hall to Go" truck into an ice-cream truck that dispenses informational refrigerator magnets with each serving of ice cream. Our Summer Quarter 2016 seminar partnered with the U.S. Department of Justice Office of Civil Rights, and asked students to reimagine the agency's public website to make it more responsive to the needs of people who think their civil rights are being violated. The result was a functional digital prototype that, among other things, highlighted relatively straightforward cases likely to resonate most with the experience of the general public, such as discriminatory housing and employment practices.

In addition to the Lab Seminar, we offer a more advanced experience, the Master Class in Legal Design. In its first iteration, in Winter 2018, class members partnered with the Massachusetts Housing Court and with students at Wentworth Institute of Technology's Masters in Architecture program, whose course was called More Than Buildings and was led by local architect and educator Marilyn Moedinger.[39] Students proposed a series of physical prototypes related to privacy and wayfinding that were installed temporarily at Boston's Brooke Courthouse.

36 Seminar enrollment is capped at eight law students and four students from Northeastern University's College of Arts, Media & Design.

37 See, e.g., Bruguera, "Reflexiones sobre el Arte Útil" [Reflections on Useful Art].

38 Legal Innovation and Technology Lab @ Suffolk Law School, https://suffolklitlab.org/

39 See More Than Buildings (blog), http://morethanbuildings.blogspot.com/ (accessed April 10, 2019).

We have found that law students take quickly and easily to the structured, creative processes of design. A design approach generally can be adopted regardless of vocation because it is about the process of creation, not about the point of creation. Design can be integrated into legal pedagogy because "it is the practice of making things that are useful, usable, and engaging. It is domain agnostic—it is about methods and outcomes, not about a particular subject matter."[40] We've observed that this ease of uptake among law students is amplified and accelerated when we have art and design students enrolled in the course alongside law students. The two disciplines briefly circle each other warily but quickly find themselves teaching each other the skills and learning of their chosen discipline as they work collectively to answer the seminar's design question. This dynamic results in an increase in the confidence level across the entire team of students in six weeks, both by virtue of students' being placed in the position of an expert (in their chosen field) and by virtue of their exposure to, and facility with, components of another discipline.

A law school design lab also can play a community-facing role, as imagined for legal clinics. A significant portion of our time is spent engaged with outside community and institutional partners on project work that often is supported by grants. Our project work is done by working collaboratively with intended end-users, following the methods of co-design, co-creation, and participatory design.[41] The approach goes deeper than "consultations" by facilitating equal collaboration between citizens affected by—or attempting to resolve—a particular challenge. A key tenet of co-design is that people are "experts" of their own lived experience.

Our application of co-design has been informed by a participatory approach in education and art. Educator Paulo Freire's work of participatory action research has profoundly affected people working for social change.[42] Contrary to the common conception that dialogue is a zero-sum debate between two parties, Freire argues that debate is in fact a community-led collaborative decision process intended to share experiences and build capacity to explore common ground for informed action.[43] Another influence for our approach to co-design is the Arte Útil movement, proposed by artist Tania Bruguera.[44] She argues that art is a tool for social and political change. Her practice draws on artistic thinking to conceive, create, and produce strategies of community action. In Bruguera's work, authors are seen as initiators and their audience as users; they collectively pursue sustainable solutions by reestablishing aesthetics as a system of transformation with practical outcomes for current urgent issues.[45] Both Freire's and

40 Margaret Hagan, "Design Thinking and Law: A Perfect Match," *Legal Practice Today,* 2014, http://www.americanbar.org/content/newsletter/publications/law_practice_today_home/lpt-archives/2014/january14/design-thinking-and-law.html (accessed April 10, 2019).

41 Ezio Manzini and Eduardo Staszowski, eds., *Public and Collaborative: Exploring the Intersection of Design, Social Innovation, and Public Policy* (New York: DESIS Network, 2013), http://nyc.pubcollab.org/files/DESIS_PandC_Book.pdf; and Veronica Donoso, et al., "Increasing User Empowerment Through Participatory and Co-Design Methodologies" (Ghent, Brussels: User Empowerment in a Social Media Culture, 2014).

42 Paulo Freire's work, *Pedagogy of the Oppressed* (New York: Continuum, 1996), is generally understood to be a foundational text in the critical pedagogy movement.

43 Levana Saxon and Virginia Vitzthum, "Theory: Pedagogy of the Oppressed," Beautiful Trouble: A Toolbox for Revolution (website), https://beautiful-trouble.org/theory/pedagogy-of-the-oppressed/ (accessed April 10, 2019).

44 "About," Arte Útil (website), http://www.arte-util.org/about/colophon/ (accessed April 10, 2019).

45 See Tania Bruguera, "Immigrant Movement International," Art 21 (website), https://art21.org/watch/extended-play/tania-bruguera-immigrant-movement-international-short/ (accessed February 19, 2020).

Bruguera's views resonate with the role of rhetoric as the art of community deliberation for a collective decision-making process. Their work both informs our approach to co-design, and it supports our theory on the synergy between law and design.

Projects and Codesign in a Law School Design Lab: RePresent and Stable Ground

Our specific legal design projects further illustrate how we use co-design to address challenges of the legal system. RePresent and Stable Ground stand at opposite ends of the spectrum of a law school design lab's possible work. RePresent is a relatively straightforward legal technology project, in which we deploy product design methods: discovery, prototyping, iteration, testing, and launch. Stable Ground is more exploratory, experimental work that taps into the creative practices of socially engaged artists and organizers.

RePresent is a digital game that prepares people to go to court without a lawyer. In 2014, NuLawLab was approached by Statewide Legal Services of Connecticut with the question of whether self-represented parties could benefit from an online, interactive "serious game" that would simulate aspects of an actual legal proceeding. Those who self-represent often have no experience addressing a judge, questioning a witness, or offering documents into evidence; thus, they find themselves facing these tasks for the very first time in a real-life hearing. Games have been proven to positively affect cognition and behavior as experiential learning environments; they allow users, through trial and error and retrial, to attain the necessary (virtual) experience that can help guide future action in reality.[46] We partnered with Northeastern's Game Design Department to design and build the game.[47]

Originally launched in 2014 in Connecticut, RePresent 2.0 is now available in three additional states: Massachusetts, New Hampshire, and Maine.[48] It can be played on a web browser through any one of the four states' legal aid websites,[49] or as a native mobile app accessible via iTunes or Google Play. We also launched RePresent: Renter, a game specifically designed to help people who are facing eviction in Connecticut and Maine. Game play data for the first six months of the release of RePresent 2.0 indicates more than 7,000 playthroughs across all four states.[50]

RePresent was created through an explicit process that combined legal research with design work. A multidisciplinary project team of legal aid lawyers, technology managers, experienced game designers, legal educators, law students, and artists worked with self-represented parties, judges, court personnel, and others through collaborative design rounds, translating the civil

46 See, e.g., Casper Harteveld, *Triadic Game Design: Balancing Reality, Meaning and Play* (Berlin, Germany: Springer, 2011).

47 The game idea was a finalist for a 2014 Innovative Idea Award from The Hague Institute for the Internationalization of Law.

48 "The Games," RePresent (website), https://www.representgames.org/about (accessed April 10, 2019).

49 See, e.g., "Are You Going to Court on Your Own?" CTLawHelp (website), https://ctlawhelp.org/en/represent (accessed April 10, 2019).

50 The RePresent suite of games is funded by a series of generous grants from the Legal Services Corporation's Technology Initiative Grant Program.

court experience into game scenarios. The games closely mirror the actual human experience of going to court without a lawyer—from how to prepare in the weeks before a hearing, to how to avoid talking to your opponent's lawyer in the hallway outside the courtroom. These insights came from the input of self-represented litigants at every step of the design process.

Stable Ground is a cross-disciplinary effort to better understand the housing insecurity-based trauma existing in neighborhoods served by the City of Boston's new Office of Housing Stability (OHS).[51] The project engages with local creative and cultural programs in the Boston neighborhood of Dorchester. By using trauma-informed arts-and-culture programming to host conversations about housing insecurity, we have helped to inform OHS's ongoing municipal programming and policy work.

Through Stable Ground, the NuLawLab has worked to embed artists, legal designers, and trauma experts into local community and municipal settings, where they contribute to local visual and performing arts exhibits and art-making events. Many of these events include facilitated conversations among artists, residents, activists, organizers, experts, and municipal leaders. They are all structured to inform existing OHS services and those in development.

The first iteration of Stable Ground (2017–2018) was structured to allow the City of Boston to better respond to rising housing insecurity through participatory, trauma-informed creative engagement with local communities. The next iteration of the project (2019–2021) will more fully develop and pilot our idea for a municipal cultural organizer-in-residence program, intended to deepen connections between local arts organizers and municipal housing stability efforts.

Our projects have brought co-design to legal challenges, in the expectation that this approach can tackle the bias and inequity that permeates the legal institutions. It does not require preconditions on participation in decision-making, it does not have foregone conclusions, and it allows those with lived experience to guide the process.

How can co-design be brought effectively into the legal system, to move toward these intended outcomes? Our past years of law school lab work have pointed us toward a few insights. Co-design requires deep listening and genuine professional modesty. It also requires work to be open to originality and creativity that emerges during a session—that is not researched via precedent, analysis, and planning. Lawyers' training to "fake it until you feel it" may be useful in representing clients' cases, but it is not a helpful way to understand what a community of several

51 Stable Ground is funded by generous grants from The Kresge Foundation. It represents a partnership of four initiatives. The NuLawLab was joined by: (1) The Office of Housing Stability, which creates new programs and policies to support the creation, maintenance, and preservation of secure and affordable housing; (2) Violence Transformed, which fosters creative action to overcome violence and extends trauma-informed training to community-based groups; and (3) The Domestic Violence Institute, which provides focused community education with the goal of helping people break the cycle of violence.

hundred people actually wants for its future. Legal co-design can train lawyers to suspend their natural inclination to direct the conversation, and train them instead to listen with deference and to learn from the people with whom they are engaged. This approach requires practiced, intentional commitments to modesty, creativity, and respect.

Conclusion

Legal institutions are in the midst of a rapid embrace of legal design. If the trajectory of the past several years holds, more talented designers soon will have the opportunity to engage with significant components of the U.S. justice system, and reform-minded lawyers and technologists will be able to pursue more opportunities for system redesign. However, as we noted at the outset, legal institutions in the United States remain infused with bias, despite many decades of effort at reform. We face a significant risk that, by failing to address bias and inequity as a key component of any legal design challenge, we risk enshrining, and perhaps exacerbating, current prejudices into more efficient and effective systems.

This discussion, especially as currently portrayed in the media, has been more prominent in the criminal justice system. However, civil courts and other aspects of our legal infrastructure are not immune from bias and inequity.[52] There have been efforts to decolonize design education and to systemically address access and equity in the field of design. A 2018 study points out that, "like the broader technology sector, the tech for justice infrastructure is disproportionately dominated by elite white cisgender men in leadership and decision-making positions."[53] The study also highlighted that "practitioners shared experiences of intersecting racism, sexism, classism, ableism, transphobia, and other forms of structural, institutional, and interpersonal oppression while working in this ecosystem."[54]

This observation is, of course, not new.[55] Since the inception of both legal technology and legal design, leading thinkers and practitioners have flagged the risk that these new systems and ideas, if not carefully considered, will merely entrench existing bias and prejudice. It mirrors a similar critique underway in design education. For example, the Design Justice Network states that "the people who are most adversely affected by design decisions—about visual culture, new technologies, the planning of our communities, or the structure of our political and economic systems—tend to have the least influence on those decisions and how they are made."[56] Based on our own experience these past several years, we think that the ten principles advanced by the Design Justice Network are worth quoting here in full:

52 Regarding the dearth of African-Americans among large law firm partners, see, e.g., Vivia Chen, "But Where Are the Black Partners?," *The American Lawyer* (website) https://www.law.com/americanlawyer/2019/01/15/but-where-are-the-black-partners/?slreturn=20190310120713 (accessed April 10, 2019).

53 Costanza-Chock et al., "#MORETHANCODE: Practitioners Reimagine the Landscape of Technology for Justice and Equity," Research Action Design and Open Technology Institute (website), https://morethancode.cc/T4SJ_fullreport_082018_AY_web.pdf (accessed February 19, 2020).

54 Ibid.

55 For example, the Creative Reaction Lab works to educate, train, and challenge Black and Latinx youth to become leaders in designing healthy and racially equitable communities. See Creative Reaction Lab (website), http://www.creativereactionlab.com/.

56 Design Justice Network (website), https://designjustice.org/read-the-principles (accessed February 19, 2020).

1. We use design to *sustain, heal,* and *empower* our communities, as well as to seek liberation from exploitative and oppressive systems.
2. We *center the voices of those who are directly impacted* by the outcomes of the design process.
3. We *prioritize design's impact on the community* over the intentions of the designer.
4. We view *change as emergent from an accountable, accessible,* and *collaborative process,* rather than as a point at the end of a process.
5. We see the role of the *designer as a facilitator rather than an expert.*
6. We believe that *everyone is an expert based on their own lived experience,* and that we all have unique and brilliant contributions to bring to a design process.
7. We *share design knowledge and tools* with our communities.
8. We work towards *sustainable, community-led* and *-controlled* outcomes.
9. We work towards *non-exploitative solutions* that reconnect us to the earth and to each other
10. Before seeking new design solutions, *we look for what is already working* at the community level. We honor and uplift traditional, indigenous, and local knowledge and practices.[57]

What would legal design look like if it were based on these principles? It would look very similar to the way the NuLawLab and many other legal empowerment organizations work.[58] Outcomes from an equitable process like this would span the spectrum from traditional legal tech tools (e.g., RePresent) to community empowerment through municipal programs (e.g., Stable Ground). A radical iterative effort, based on equitable principles, might not be so radical for the legal design field after all.

The concept of fair and impartial justice is one of humankind's most aspirational and, to date, unattainable ideas. The legal design movement, although certainly not a panacea for all the world's problems, holds the potential to significantly improve how people understand, access, and activate their legal rights. A process that is deliberately structured to address systemic bias has the strongest potential to deliver on the promise of both design and justice and to actually meet the emerging transformative potential of this nascent legal design movement. We urge legal designers to take up this cause.

57 Design Justice Network (website), "Design Justice Network Principles" http://designjusticenetwork.org/network-principles (emphasis in original).

58 See, Namati as a leading legal empowerment organization, https://namati.org (accessed February 19, 2020).

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Airlines, Mayonnaise, and Justice: Reflections on the Theory and Practice of Legal Design and Technology

Gordon Ross

Fifteen years ago, in a small meeting room at the Vancouver Law Courts building, I had an important realization as a professional designer. My firm had been hired to redesign the case management system of record for the British Columbia (BC) Court of Appeal, the highest court in the Province of BC. In the midst of reviewing requirements for the new web-based application, which was set to replace the DOS-based system that had run the Court since 1984, I stopped. In light of a particular requirement needed for the shift—one that seemed convoluted and likely to add unnecessary steps for Court staff—I asked the Court Registrar why we needed to do things in this manner.

She answered matter-of-factly: "because it's the law," she said, referring to the *British Columbia Court Rules Act* and Court of Appeal Rules, the source of the functional requirement in question.

"Oh. Right," I answered.

Picking up on my visible disappointment with her answer, she inquired, "Why the 'Oh. Right'?"

I replied that I thought we could eliminate steps and consider a simpler flow, resulting in a better user experience for her staff. But that option was clearly off the table. Because of the law.

"Well, we can change the law you know...," she said with a smile. "In fact, it's what we do around here. It might take a while, but if it's worth doing, then we should change it."

These words led to my epiphany. The Court of Appeal case management system wasn't my first project with the Courts or with the Ministry of Attorney General of BC, and it wasn't my first project working within the broader public sector in BC, either. But it remains memorable, simply because of this one brief exchange with the Court Registrar. She helped me to realize something of significance for a designer working on technological systems in the legal system: The law is a material. And just like other materials I work with, it is malleable, and it can change.

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Fast-forward fifteen years, and my design career has evolved alongside rapid changes in technology and the role it plays in the courts, government, and society. Much of this career has been spent working with and for the public sector at the intersection of digital technology, public services, policy, and legislation. My practice has taken me into judges' chambers, behind the court registry counter, inside legal firms to observe lawyers and legal assistants, and into conversations with everyday people who are struggling to make sense of their legal problems within a complicated, expensive, and inaccessible legal system. It has also brought me into collaboration with passionate advocates, bureaucrats, activists, scholars, and innovators seeking better ways to ensure that people have access to justice.

In November 2018, approximately 150 of these global advocates, scholars, designers, and innovators gathered at Stanford Univerity's d.school for the 2018 Law + Design Summit, convened by Margaret Hagan and the Legal Design Lab at Stanford Law School. Our assignment over the course of two days was to explore the question, *"How can we use participatory, creative design methods in public institutions to serve people better?"* Through lightning talks, small group discussions, and a series of rapid prototyping workshops, we sought to better understand the relationships among design methods, policy, and the law.

This article builds on my reflections, following the Stanford Law + Design Summit, about my experiences introducing design theory, methods, and mindsets into legal and government contexts.[1] I highlight some of the challenges and tensions I have experienced when using design methods in the justice system and articulate what I believe these tensions reveal about how governments have acted in both historical and contemporary times. I describe design methods and link them to theoretical influences. I conclude by drawing attention to adjacent theoretical territories that might help to further enact a more equitable and just society through a legal design practice.

Jet Airliners and Mayonnaise

Finding a contemporary text about the relationship of design, government, and our modern condition—one that doesn't start with some description of the increasing complexity in the world and the challenge it represents for the public sector—is difficult. Christian Bason, a design scholar and CEO of the Danish Design Centre, begins with a familiar narrative:

> The current attempts of many nations, in the wake of the global financial crisis, to control public finances happen at the same time as the very same societies are facing

1 Gordon Ross, "Making Sense of Prototyping for Policy," *Medium* (website), November 19, 2018, https://medium.com/@gordonr/making-sense-of-prototyping-for-policy-65e1f98888be.

> seemingly intractable social challenges, such as chronic health problems, ageing, unemployment—in particular, among young people—and growing income disparity and poverty.[2]

Innovation policy and design researchers Jesper Christiansen and Laura Bunt sing a similar refrain:

> Problems of a global nature, like environmental preservation, economic growth, demographic changes, democratic representation, education, homeland security or crime prevention, are characterized by their complexity, and necessarily cut across different policy domains, professional sectors, organizations and political and administrative jurisdictions.[3]

And designer, researcher, and educator Lucy Kimbell calls attention to the "new post-normal condition," referencing philosophers of science Silvio Funtowicz and Jerome Ravetz's term, "post-normal science" and their description of a world characterized by the combination of high epistemological, ethical, and systems uncertainties and high decision stakes.[4] Kimbell writes:[5]

> Despite the diversity of ways of making sense of all of this, there are shared themes that characterize the environment in which organizations operate and in which people live as dynamic; turbulent; involving many actors and elements that interact with one another; and nonlinear, so that a minor change can have a disproportionate effect.

This description suits the twenty-first century context of government, law, and design: complexity. Complexity isn't just a synonym for hard or difficult. Complex systems, the attributes of which are described by authors such as Lucy Kimbell, Dave Snowden, and Judith Innes and David Booher, are unpredictable by definition.[6] Once actors and elements in a complex system begin to interact, there is no returning to the previous position of the system.

Steve Holt, a retired Boeing engineer and complex systems scholar, draws attention to philosopher and complexity researcher Paul Cilliers' humorous and easy-to-understand example: "A jumbo jet is complicated, but... mayonnaise is complex."[7] Holt and his co-authors, Paul Collopy, and Dianne Deturris, continue the analogy:

> That is, once built, each part of an airplane can be taken apart, analyzed, and then put back together. The result will still be an airplane. A person confronted with the constituent ingredients of mayonnaise would be hard

2 Christian Bason, *Leading Public Design: Discovering Human Centred Governance* (Bristol, UK: Policy Press, 2017): 14.

3 Jesper Christiansen and Laura Bunt, "Innovating Public Policy: Allowing for Social Complexity and Uncertainty in the Design of Public Outcomes" in *Design for Policy*, ed. Christian Bason (London: Routledge, 2016), 41–56.

4 Silvio Funtowicz and Jerome Ravetz (2003), "Post Normal Science," *International Society for Ecological Economics, Internet Encyclopaedia.* Available at http://isecoeco.org/pdf/pstnormsc.pdf.

5 Lucy Kimbell, *Service Innovation Handbook* (Amsterdam: BIS Publishers, 2015): 36.

6 See Dave Snowden, "Cynefin Framework Introduction," Cognitive Edge (website) http://cognitive-edge.com/videos/cynefin-framework-introduction/ (accessed March 21, 2019); and Judith Innes and David Booher, *Planning with Complexity: An Introduction to Collaborative Rationality for Public Policy* (London: Routledge, 2010).

7 Paul Cilliers, *Complexity and Postmodernism* (London: Routledge, 1998), 3.

> pressed to predict what the result of beating them all together would be and, once created, the mayonnaise cannot be "unassembled."[8]

A fundamental difference exists between complicated, mechanical systems with a higher degree of order and cause-and-effect dynamics, on the one hand, and complex systems with a higher degree of uncertainty, non-linearity, and fluidity, on the other. This distinction provides the backdrop for one of the main tensions of design in a public sector context. Decades of public administration and policymaking have been underpinned by the "optimistic belief in social reality as programmable."[9] The corresponding belief is that the way to achieve results is through the exercise of rational decision-making and logical positivism, treating societal problems as if they exist within a causal, mechanical system. If we do X, then Y will happen.

Many civil servants continue to use forms of logic and analytical practices that align with the belief that the system in which they are intervening—through policy and/or the services that result from policy—functions in a mechanical fashion. As Raul Lejano, public policy professor at New York University, states, "The notion of policymaking and analysis as a rational process is traced to the rise of systems and decision analysis, beginning with the Second World War."[10] Bent Flyvbjerg, Danish planning and Oxford project management scholar, also highlights the "heyday of logical positivism in the 1950s and 1960s" and how the "rationalist ideal" persists, occupying a "prominent position today in key scientific growth areas, such as the new information sciences, cognitive science, linguistics, and computer science."[11]

Certain aspects of the complex system of government and the law do function mechanically. For example, zooming back in to view the BC Court of Appeal case management system, we have a prime example of a technical system that takes in court record data and produces reports, schedules, and assignments. Its functions and features make it a predictable machine. But separating the function of the case management system from the way in which the Court of Appeal exists and operates within its broader societal context is important: The latter is a legal system struggling with the broader challenges of access to justice. This appeal system in BC now sees nearly 30 percent of all filings from self-represented litigants faced with the daunting task of arguing that a BC Supreme Court judge made a legal mistake in a previous case.

The staff behaviors we sought to afford as designers; the law that enabled or constrained these behaviors; the way law and policy become inscribed in code, enacted, and re-enacted

8 Steve Holt, Paul Collopy, and Dianne Deturris, "So It's Complex, Why Do I Care?" *Transdisciplinary Perspectives on Complex Systems New Findings and Approaches*, ed. Franz-Josef Kahlen et al. (Switzerland: Springer, 2017): 31.

9 Christiansen and Bunt, "Innovating Public Policy," 41–56.

10 Raul Lejano, "Postpositivism and the Policy Process," in *The Routledge Handbook of Public Policy*, ed. Eduardo Araral et al., (London: Routledge, 2013): 98–112.

11 Bent Flyvbjerg, *Making Social Science Matter: Why Social Inquiry Fails and How It Can Succeed Again* (Cambridge: Cambridge University Press, 2001).

every time someone uses the software; and the unintended consequences of the logic of such systems—all of these aspects of our design work affect in significant ways the broader ecology of actors involved (e.g., registry staff, self-represented litigants, expert lawyers, and the judges of the highest court in the province). The case management system simultaneously is complicated (the jet airliner) and is existing within the broader complex legal system (the mayonnaise) of civil society.

Structure, logic, and rational decision-making, supported through positivist beliefs, are not without their utility. In highly ordered systems, they are entirely appropriate.[12] But when they are applied to complex systems, which lack that structure, causality, and order, we as designers are using the wrong tools for the job. Snowden refers to this situation as "bounded applicability"—the limits of the utility of any given tool within a particular problem domain.

Complexity, then, sets the stage for the potential of contemporary and emerging design methods to chart new and innovative ways through these problem spaces. Complexity is where *"the concept of design becomes relevant."*[13]

What Is Design Good For?

Bason sets forth the promises and challenges of design in policy and governmental contexts in *Design for Policy*.[14] He claims that design offers three primary benefits in this context:

- A different approach to the task of understanding public problems;
- The opportunity to co-design policy options through the interplay of policymakers, experts, citizens, or business representatives using the emergent and more collaborative aspects of design; and
- The devices—concepts, identities, graphics, products, service templates, and system maps—that can help give form and shape to policy in practice.

On the ability of design to make concepts visible, Bason writes, "Design is perhaps at its best when it creates the tangible artefacts that we as humans can engage with physically and emotionally."[15]

Will This Feature Get You to Use the Service? No? How About *Now*?

Through another joint project with the BC Ministry of Attorney General and the BC Court of Appeal, my firm worked on the design and development of an electronic filing (e-filing) service that gave lawyers and citizens the ability to file legal documents

12 Dave Snowden and Mary Boone, "A Leader's Framework for Decision Making," *Harvard Business Review* 85, no. 11 (2007): 68–76.

13 Christiansen and Bunt, "Innovating Public Policy," 41–56.

14 Christian Bason, "Introduction" in *Design for Policy,* ed. Christian Bason (London: Routledge, 2016): 1–10.

15 Bason, *Design for Policy,* 5.

and forms with the courts online. The project was instructive in revealing Bason's three ways that design helps us to understand the architecture of problems, provides opportunities for collaboration, and makes policy intent tangible.

The project began shortly after a year-long policy consultation had wrapped up between the Court of Appeal and legal professionals over plans the Court had made to require mandatory e-filing of certain key appeal documents (factum) through the legacy provincial e-filing service, Court Services Online (CSO). The consultation was informative in that we observed how legal professionals enact policy and engage with proposed technological change. The Court published a short discussion document that described its goals and intent of making e-filing mandatory and the process by which a user would e-file, including detailed descriptions of specific buttons in the user interface that the user would be required to click.

Months passed, and the legal professionals contemplated the proposed changes, writing responses to the consultation paper. The Court then gathered the responses, analyzed each, and published a final summary about how the Court might address the consultation participants' issues, including the legacy e-filing system's lack of usability, the exclusion of self-represented litigants from mandatory e-filing, and the integrity of Court records.

As a professional designer, I recognized the urge and intent behind this exercise but marveled at its form. This process was prototyping and usability testing *in prose*. The elements in this process were generalities and specifics, principles and pixels, being both described and imagined in this consultation paper. Lawyers and advocates imagined sitting down with the software and adapting their existing practice. Words were written and counter-memos were drafted in response.

When our team began to work on designing the new filing experience engendered by the consultation, we quickly ventured into the offices and chambers of those who prepare, submit, and deliberate over e-filings to better understand the "architecture of the problem," in the words of strategic designers Bryan Boyer, Justin Cook, and Marco Steinberg.[16] These users' perspectives had been outlined and hinted at in the feedback received to date, but our mission was to see first-hand the practice of filing and to discern both the challenges and opportunities. Our observational fieldwork with legal professionals and judges revealed that the particular legal documents considered in the consultation (factums) were a problematic starting point for a revised design.

Instead of pursuing the mandatory filing of factum, a document typically filed during the middle of an appeal process, we advocated for a different focus and scope for the project. What

16 Bryan Boyer et al., "Legible Practises: Six Stories About the Craft of Stewardship," SITRA (website) (2013), https://www.sitra.fi/en/publications/legible-practises/.

seemed a more natural starting point for a new e-filing experience was at the beginning—at the initiating forms that start an appeal with the Court (the Notice of Appeal). After some deliberation and debate, our team and the Court agreed, and we reset our design activities.

Initiatives to improve access to justice often focus their efforts on trying to improve the procedural dimension of the legal system, like redesigning forms and filing experiences. This approach is driven by the idea that if we improve the procedural aspects of the courts, we improve overall access to justice. Legal scholar Trevor Farrow explains:

> To date, the major focus of thought and reform related to access to justice has been procedural. Access to justice has been equated largely with access to lawyers and courts. The more legal process we provide—through lower legal fees, more lawyers, and faster and more accessible court hearings—the more we are improving access to justice. These procedural reforms are often a good thing in terms of making the legal system more efficient, user-friendly and, overall, accessible.[17]

In Canada, the concept of user-centered design is recognized as one of the main methods for legal system improvement, receiving some of its highest profile attention from Thomas Cromwell, former Supreme Court of Canada Justice:

> Too often, we [justice administrators] focus inward on how the system operates from the point of view of those who work in it. Until we involve those who use the system in the reform process, the system will not really work for those who use it.[18]

Designing a better experience around forms and filing—one that is easier to work with from both sides of the registry counter—is seen as a way to improve the overall efficiency of the system. Therefore, it should benefit legal professionals, self-represented litigants, and registry staff alike.

Following the analysis of the design research fieldwork for the Court of Appeal filing project, our design team set out to create a working prototype of a new digital service that focused on the filing of the initiating Notice of Appeal form. Working alongside legal assistants and lawyers who specialized in appeal filings, we had discovered a number of barriers to e-filing. The province's legacy e-filing system had been in place for more than ten years when the project was initiated, and adoption of appeal e-filing was low.

17 Trevor Farrow, "What Is Access to Justice?" *Osgoode Hall Law Journal* 51, no. 3 (2014): 970.

18 Action Committee on Access to Justice in Civil and Family Matters, "Access to Civil & Family Justice: A Roadmap for Change" (report) (2013) http://www.cfcj-fcjc.org/sites/default/files/docs/2013/AC_Report_English_Final.pdf (Ottawa: Action Committee on Access to Justice in Civil and Family Matters, 2013): 7.

In our speaking with paralegals and legal assistants doing the hands-on work of filing for their lawyers, what became clear is that they faced a cocktail of issues: time pressures to file (i.e., a 30-day deadline to appeal, following the decision by the lower court), combined with the sometimes complicated and error-prone nature of the data on the form, and the high risk of rejection of the filing at the registry counter because of these factors and others. Because of these problems, filers were preferring an eleventh-hour paper filing in person over what seemed to be a more convenient electronic means.

Our team began prototyping with these barriers in mind, using rapid-prototyping software to create a sufficiently detailed working mockup of the new filing service. With each two-week design sprint cycle, we addressed a barrier identified in the field-work and incorporated a key feature into the design, returning to test with users and validate the growing system.

Data entry from the lower court decision into the initiating form was error prone because it often involved the task of cutting and pasting or retyping data from previous court documents. What if we could extract the lower court decision data directly from the lower court's system of record and pre-populate the known file numbers, locations, dates, and parties within our new digital service? Our prototype arrived back at the legal firms for its first round of testing and was met with positive feedback and the statement, "but I still wouldn't e-file...."

Style of cause, the formal title of how the names of the parties appear on legal documents (e.g., Singh vs. Lee), is often quite complicated in appeals, with multiple parties appearing in a different order than they did in the previous court case. As such, incorrect style of cause is frequently the source of rejection at the registry counter because of the misordering of the parties in the new appeal matter. We designed and developed an automated "style of cause builder" in the interface, allowing filers to move parties from one side (appellant) to another (respondent). Another round of testing and another response: "That's lovely, but I still wouldn't e-file...."

We moved upstream into the domain of policy and court rules at this point, knowing that a significant barrier was the fear of rejection itself. We perceived the default filing mode of the Court to be "reject everything filed until accepted." So we prototyped the idea of an "auto-accepted" Court filing—where accepting a filing was the default and rejection was an exception—using an automated system and incorporating a staff review practice that was conducive to small changes required. "Well...," said the filing professionals, "that's amazing! But I'd still probably file in person.../"

Amidst the dialogue during prototyping, because we had addressed seemingly every issue and barrier to e-filing that we had come across in our design research phase of the project, we returned to a more inquisitive place with our participants. "Tell me what happens next.... What happens after the initial filing?" In this line of inquiry, legal assistants excitedly told us about their calendar management practices and "bring forward systems" that kept track of key dates and times, including the calculation of the next filing deadline that, if missed, would mean the premature end of their lawyer's and client's appeal. They described how registry counter staff would give them the Court rules and a calendar and how they would manually count days, ensuring that they had managed to calculate the next filing date correctly.

"You mean the Court doesn't give you the dates?" we asked. Our software development team knew that, if there's one thing computers do well, it's the basic math required to calculate dates. As essayist and digital agency owner Paul Ford writes, "a computer is a clock with benefits."[19]

We probed further: "What if you could electronically file, with all of these new features, and be auto-accepted, and be given the definitive next filing dates from the Court?"

We finally received our answer: "Oh, I'd e-file in a heartbeat!"

We took our recommendations back to the Court of Appeal and learned that although all of the other procedural improvements were appreciated—even the somewhat unorthodox policy idea of auto-accepting initiating appeal filings—the calculation of dates for filers was a non-starter. This capability was one design idea that went too far and one that challenged the obligations and responsibilities of the parties involved in an Appeal. The Court could tell a filer they had the wrong date and had missed a filing deadline, but it couldn't tell them when to file. This responsibility fell to the filers—and to them alone.

Concepts, Knowledge, and Two Sets of Friends on a Saturday Night

The Court of Appeal e-file prototyping and digital service design project played out in a way I believe many designers might recognize in their contemporary practice. Observation and fieldwork yielded previously unaddressed aspects of a problem facing the adoption of technology. Co-design with users and experts demonstrated that the creation of value in service exchanges is an iterative process. By making policy intent tangible through a redesigned service, we came to create new knowledge about current

19 Paul Ford, "What Is Code?" *Businessweek*, June 11, 2015, https://www.bloomberg.com/graphics/2015-paul-ford-what-is-code/.

shortcomings and future opportunities, as well as to discern the boundaries between the plausible, probable, and preferable (and for whom) of a new digital service.

Other legal design projects undertaken by my firm have yielded a similar pattern of how insights and knowledge are generated. Design concepts allow us to imagine new ways of doing work, while also shedding light on existing practice. We move from concept to knowledge and back again to concept in countless moments throughout our design activities. These movements are known as disjunction and conjunction in French design engineering professor Armand Hatchuel's Concept–Knowledge (C-K) Theory. They occur frequently in our legal design projects, but they are still perceived as somewhat novel and unexpected by many of the legal and government stakeholders with whom we interact. This disconnect can be understood with a simple but powerful learning device present in Hatchuel's development of C-K Theory and his concept of *expandable rationality.*[20]

Hatchuel positions expandable rationality in response to the concept of *bounded rationality* proposed by American economist, political scientist, and cognitive psychologist Herbert Simon, who focused on design as a type of problem-solving and decision-making behavior. Hatchuel introduces his notion of expandable rationality using a thought exercise involving two sets of friends on a Saturday night. The first group of friends is going to see a good movie and is trying to decide on which one to see. The second group of friends is trying to organize a "nice party" and to have a good time. Hatchuel outlines an important difference between these two simple scenarios. Finding a good movie is a classic example of the application of bounded rationality: a search for the optimal solution among a finite list of possible movies, judging movies against criteria, and the role of expertise (e.g., a frequent movie-goer) within the decision-making behaviors of the group of friends. The second set of friends might deploy some of these tactics, but the friends face a different situation because their "nice party" is an *infinitely expandable concept.* This openness results in three differences in the decision-making process:

- Unexpected expansion of initial concepts (redefinition or emerging concept of party);
- Design of learning devices (the use of prototyping, rehearsals, explorations); and
- Social interaction as a design resource and designable area (i.e., designers as producers/resources in creating the party and thus as the subjects and not just objects of design).

The learning scenario Hatchuel provides has the ability to highlight to law and design practitioners the types of "problems" that are framed in their work, as well as the relationship between

20 Armand Hatchuel, "Towards Design Theory and Expandable Rationality: The Unfinished Program of Herbert Simon," *Journal of Management & Governance* 5 (2001): 260. https://doi.org/10.1023/A:1014044305704.

concepts and knowledge—and which is which—at any given stage during a design process. When the original problem and its implied solution have started to drift, unravel, or become contested in the midst of a design research or prototyping phase, I have been known to ask teams: "Are we going to see a movie and the question is simply 'which one?,' or are we really talking about how to have a good time on a Saturday night?" Instead of asking "How do we redesign the e-filing of factum?," we instead asked, "How do we create a better e-filing experience at the Court of Appeal?"

Hatchuel's analogy and design theory are useful to have on hand to support legal design work. They are especially useful when the introduction of novelty through design confronts the culture of expert knowledge, precedence, and hierarchical decision-making that characterize the courts and the legal system. A non-threatening analogous example can be just the right thing to help stakeholders to see beyond the desire to deduce their way to an "optimal solution" and where no evidence yet exists to prove or disprove the validity of the proposed concepts associated with the problem in focus.

Where Are We Going?

Throughout this reflection, I have tried to highlight the connection between certain positivist modes of thought and the associated limiting behaviors prevalent in a legal and government system that has aligned itself with these modes. These modes further reinforce the status quo and limitations of the current system through an increased dependence on automation and technological solutions. Complex systems become confused with complicated systems, and the search for solutions occurs within bounded rationality, rather than allowing for expandable rationality. Creating novel concepts and knowledge becomes difficult at best, if not unachievable.

This critique might appear to be an instance of a long-standing argument or complaint made by designers about being qualitative practitioners in a world dominated by quantitative thinking, and a postmodern critique of modernist mindsets and worldviews. The presence of this tension in my work has pushed me to investigate alternatives—different ways forward into better design for complex problems. I have found two paths forward thus far that have informed my practice and have helped me to continue to evolve it: abductive reasoning and phronetic practice.

Abductive Reasoning

Management professor Max Boisot and complexity scholar Bill McKelvey use complexity science to outline ordered, complex, and chaotic system regimes.[21] They suggest that modernist and postmodernist perspectives needn't be an "either/or" proposition, but that together they afford an opportunity for both ordered and

21 Max Boisot and Bill McKelvey, "Integrating Modernist and Postmodernist Perspectives on Organizations: A Complexity Science Bridge," *Academy of Management Review* 35, no. 3 (2017): 426.

complex systems to exist simultaneously at different times and scales. Dave Snowden's work on complexity extends this perspective through his conceptual decision-making framework, Cynefin, which is an increasingly popular concept among policymakers and agile software developers alike.[22] The framework allows for the discernment of an appropriate course of action across simple, complicated, complex, and chaotic contexts.

Boisot and McKelvey outline a strategy for dealing with the emerging phenomena of complex systems without requiring that designers become familiar with the mathematical descriptions of complex systems present in the work of physicists and complexity theorists (e.g., Murray Gell-Mann, Luis Bettencourt, and Geoffrey West). In fact, designers should find their strategy entirely familiar: It involves abductive reasoning. Management and design academic Roger Martin, Dutch design academic Kees Dorst, and Lucy Kimbell each have contributed to an understanding of abductive reasoning in design contexts.[23] Boisot and McKelvey describe an important distinction of what abduction offers that greatly benefits practitioners in the legal and policy design spheres:

> Lying between idiosyncratic inductions and predictions based on deductive tests, scalable abduction offers *anticipation*. Anticipation is "softer" than prediction, bridging between the strong predictive claims achievable in, say, classical physics and the unpredictable, often seemingly chaotic press of singular events confronting us daily at the human scale. Both prediction and anticipation shape our expectations and orient our responses. Both draw on evidence for their justification, although anticipation, often only expressible in a loose, narrative form, achieves less precision than prediction. While predictability is problematic given complexity, anticipation remains fluid with respect to changing conditions and tensions, thereby facilitating adaptive action and survival.[24]

An emerging method that embodies this spirit of anticipation is the use of design fiction or speculative design, which involves the creation of future objects and scenarios that probe the boundaries of the plausible and the preferable. Design fiction is working its way into practice in government, tackling issues like social care, autonomous shipping, and transit fares.[25] Might we see the same use of design fiction in legal design in the near future?

22 Snowden and Boone, "A Leader's Framework for Decision Making," 68–76.

23 Roger Martin popularizes abduction for business readers, noting its ties to design thinking in a management context. Dutch design academic Kees Dorst examines two types of abduction (normal and design) present in design. Lucy Kimbell links abduction, design, and new forms of policymaking in her studies of the UK Cabinet Office Policy Lab. See, e.g., Roger Martin, *The Opposable Mind* (Cambridge: Harvard Business Review Press, 2009); Roger Martin, *The Design of Business* (Cambridge: Harvard Business Review Press, 2009); Kees Dorst, *Frame Innovation* (Comabridge: MIT Press, 2015); and Lucy Kimbell, "Abductive Policymaking. Draft section of report from research fellowship," Researching Design for Policy (website), July 7, 2015, https://researchingdesignforpolicy.wordpress.com/2015/07/07/abductive-policy-making-draft-section-of-report-from-research-fellowship/.

24 Boisot and McKelvey, "Integrating Modernist and Postmodernist Perspectives on Organizations: 426.

25 Uscreates (a design agency acquired by another firm FutureGov after this article was written), "We're Using Design to Reimagine the Future of Social Care. Will You Join Us?" https://medium.com/@hello_83733/were-using-design-to-reimagine-the-future-of-social-care-will-you-join-us-280de95b9ac7 (accessed March 21, 2019); David Kenrick, "Autonomous Ships Are the Future—and the UK Government Is Getting Ready," Apolitical (website), https://apolitical.co/solution_article/autonomous-ships-are-the-future-and-the-uk-government-is-getting-ready/ (accessed March 21, 2019); and Sagal Kahin, "Design for Policy: Bringing a Design Thinking Approach to TransLink's Fare Review Process," *Insights* (blog), https://oxd.com/insights/design-thinking-translink/ (accessed March 21, 2019).

Practical Wisdom

Another theoretical position that emerged from the same debate among the natural sciences and social sciences is that of Danish planning theorist Bent Flyvbjerg. Flyvbjerg articulates his position in his work on the Aristotelian intellectual virtue, *phronesis,* or practical wisdom.[26]

Flyvbjerg took on the project of advocating for a social science that doesn't model itself on the natural sciences. His approach, the phronetic social science movement, is a departure from instrumental rationality and takes a value-rational approach to social research and making recommendations. Value-rationality involves a "reflexive analysis of values and interests and how they affect different groups in society."[27] Simply put, our modern fixation on what we can do with design and technology has ignored the question of what we *should* do with design and technology. The latter is especially important for my work in a Canadian legal design context, where reconciliation demands that everyone address the history of systemic injustice and oppression carried out against Indigenous Peoples by the government and the legal system, the legacies of which persist. An increasing number of ways in which the practice of legal design can become phronetic emerges in the genres and discourse around inclusive design, transition design, and decolonizing design; these ways also become visible in the examples in New Zealand and Canada, where designers practice design in the context of reconciliation influenced by Indigenous ways of knowing.[28]

Any given policy is about intent, and it is composed of normative statements (recommendations) on *how the world should be.* Given that design is broadly engaged in framing and rendering that intent visible and enabling policy's desired outcomes, phronesis is a natural point of inquiry that an emerging legal design genre needs to investigate further. Flyvbjerg sets forth four value-rational questions to enact this intellectual virtue of practical wisdom in practicing social scientists.[29] I believe legal designers would benefit in their work from contemplating these simple questions:

1. Where are we going?
2. Who gains and who loses, and by which mechanisms of power?
3. Is this development desirable?
4. What, if anything, should we do about it?

26 Bent Flyvbjerg, *Real Social Science: Applied Phronesis* (Cambridge: Cambridge University Press, 2012).

27 Bent Flyvbjerg, *Making Social Science Matter: Why Social Inquiry Fails and How It Can Succeed Again,* trans. Steven Sampson (Cambridge: Cambridge University Press, 2001): 38–42.

28 See, e.g., Kevin Ehman, "Indigenizing Policies and Services in BC: Lessons from Te Ao Māori," Insights (blog), https://oxd.com/insights/indigenizing-policies-and-services-in-bc-lessons-from-te-ao-maori/.

29 Flyvbjerg, *Making Social Science Matter.*

Designers tend to be very good at understanding the *desirability* of our proposed solutions and concepts through design research means. But where is the political dimension, explicitly addressed in asking who gains, who loses, and by which mechanisms of power? Answers to these questions, at least in my work, often are not easily found within the project brief. Our Court of Appeal example of calculating dates on behalf of filers might seem like a mundane piece of business logic inside of a digital service, but it demonstrated who ultimately holds the power in the appeal process. Although we had prompted the questions of whether this development was desirable and what, if anything, should be done, the debate also demonstrated the limits of our influence and power within the context of the project.

Wayfinding Precedes Navigation

Design has much to offer the legal and justice system and our many forms of governing, which we are only starting to investigate and understand. As material, law and policy can be designed. As behavior, design can introduce new concepts and knowledge about the relationship between the law and the world it seeks to make just. But reasoning and knowing in traditional ways—ways still favored by many working within the system—might not be sufficient to address the societal, economic, and environmental challenges we now face.

The examples of work within justice that I have provided, alongside a brief exploration of relevant design theory, are an effort to demonstrate how new ways of knowing, experimental methods, and a capacity for anticipatory awareness can chart a new direction for a legal design practice—one that is sensitive both to the unanticipated consequences of our best intentions and to the power dynamics present in a system struggling with access and equity. When charting the new and emerging territories of legal design, we would do well to remember that "wayfinding precedes navigation."[30]

30 Robert Chia and Robin Holt, *Strategy Without Design: The Silent Efficacy of Indirect Action* (Cambridge: Cambridge University Press, 2011).

The Escambia Project: An Experiment in Community-Led Legal Design

Melissa A. Moss

Six large round tables were piled with candy-colored sticky notes and stubby markers. Mismatched easels lined three-quarters of the perimeter. Along the back wall, coffee in cardboard boxes and a line-up of assorted pastries beckoned. It looked like any other training room decked out for a management team brainstorming session—except it wasn't. It was February 2017, and I was at Pathways for Change—a community services support center, in Pensacola, FL. In just a few minutes, a stream of people would come through the doors to join us. The cast of characters would change over the course of the next three days, the crowd would thicken and thin, but the level of excitement and anticipation would remain. A small team of professionals—Pathways for Change CEO Connie Bookman, Legal Services of North Florida Executive Director Leslie Powell Boudreaux, Stanford Legal Design Lab Director, Margaret Hagan, and I—had been working for months to plan the next three days. We were now set to take part in something we had never done before: an experiment in community-led design called the Escambia Project.

The Project: A Community-Based Laboratory for Justice

The Escambia Project is the umbrella name for a community-led design project that began in Escambia County, FL, in 2017. Its goal was to improve the community's access to legal assistance. It was an experimental, year-long, participatory design process, and it generated three new initiatives that were prototyped, field tested, and prepared for continuation. The Escambia Project ultimately engaged more than 100 community members and relied on the support of dozens of local volunteers and organizations.

The experiment was conceived at a Florida Bar Foundation board and executive leadership retreat in summer 2016. The goal at the retreat was to consider how the Foundation might achieve more influence with its programmatic investments.[1] How sufficient was the Foundation's practice of targeting Foundation grantmaking as operational support for the same programs year after year?

1 The Foundation's mission is to provide greater access to justice in Florida. See more at https://thefloridabarfoundation.org (accessed September 2017).

https://doi.org/10.1162/desi_a_00603

Could the Foundation embrace a more "catalytic" approach to philanthropy that might result in more creative or innovative ways to bridge the civil justice gap? Facilitated discussions, role-playing activities, and brainstorming sessions followed. Part of the answer involved setting aside funds for innovation and experimentation by both Foundation grantees and the Foundation.[2] The first opportunity for such experimentation emerged from a brainstorming session when Board Member Connie Bookman offered the nonprofit she founded, Pathways for Change, as a community-based "laboratory."

As then-Deputy Director for Strategic Initiatives at the Florida Bar Foundation, I drafted the initial Escambia Project proposal, shepherded its development, recruited the primary partners, and participated as an observer, cheerleader, and sounding board throughout. The Escambia Project proposal was then accepted, the primary partners were aligned, and the Florida Bar Foundation contracted with Margaret Hagan to serve as design facilitator.

This article tells the story of Escambia County's initial foray into community-led design in the civil justice arena. Community members became equal partners and decision-makers throughout the design process. It marks one of the first times co-design has been used in the legal aid system to surface peoples' problems with family, employment, housing, debt, and other non-criminal matters. In the following sections, I offer observations about the effects of the community-led design process on the project, the lessons I learned, and my recommendations for using community-led design to help transform the justice system.

A Participatory Design Approach to Civil Justice Reform

Following the Florida Bar Foundation's board retreat in 2016, Margaret Hagan and I worked to set the parameters for the vision of the Escambia Project: As Margaret noted,

> We know that oftentimes when we decide to tackle a problem, we get a lot of smart people in the room. We give them coffee. We give them a task and we say, "by the end of the day, let's have a plan, let's come up with what that new agenda should look like, let's decide how we should spend our funds." We took a different approach with the Escambia Project. We were guided by the principle of co-design, which is short for collaborative design and community involvement. It's not rocket science. It's saying: Let's get the people in the room whom we are trying to engage so that we can hear directly from them what they want and how they want it.[3]

2 As a result of the retreat, the Florida Bar Foundation Board of Directors approved this resolution: "The Florida Bar Foundation should execute a 'strategic reset' and establish itself as not only a source of funds and expertise, but as a strategic leader and catalyst in the cause of increased access to justice for all. Its primary goal in the immediate future should be to serve as an agent of rapid, effective and high-impact change."

3 Margaret Hagan, speaking at The Florida Bar Foundation Board of Directors meeting in September 2017.

In a typical design-thinking process, potential users are not included in the core decision-making or work. Designers conduct research and interview community members to develop user personas. These personas enable designers and others to look through a user-centered lens when framing the problem statement, generating ideas, and developing prototypes. However, users often are not invited into the process until the testing phase, when they can voice concerns or propose changes to the prototypes the design team has created.

Participatory design is a core variation of the design process. In it, the intended users of a new product or service, other related stakeholders, and broader community members are part of the design process from beginning to end. This method of design "goes beyond the one-dimensional process of consultation, helping to involve people in decision-making throughout the design process, from visioning to implementation."[4] The "experts" (in this case, the lawyers, technologists, and designers working on civil justice) are not producing something *for* someone, they are developing it *with* them. In community-*led* design, not only are the community members full partners in the entire design process, but they also are framing and prioritizing the community's challenges and are the final arbiters in the decision-making of what initiatives are launched out of the process.

We decided to use a community-led process to identify promising new solutions for civil justice services—solutions that people in the local community would benefit from and that they would use. As others had found in previous design processes using a similar community-led methodology, this approach helped to improve civic participation, create more democratic outcomes, build a sense of community, and strengthen users' attachment to their community and each other.[5] Our expectation was that a community-led design methodology could benefit Escambia County in the same manner and that it also could ensure that our resources would be wisely spent on new projects to improve people's access to legal assistance.

The Project's Impetus

In civil court proceedings in the United States, people have no right to counsel if they are unable to afford one. Still, although counsel might be too costly for many, the cost of not having counsel also can be astronomical: "You can lose your children, you can lose your home, you can lose your livelihood without having legal help to get you through complicated legal proceedings."[6]

This calculus contributes to the wicked problem of the civil justice system: People are at risk in this system, where significant, damaging decisions are made about the custody of their children;

4 Katerina Alexiou et al., "Valuing Community-Led Design," *Open Research Online,* 2 (2013): 3, http://valuing-community-led-design.weebly.com/uploads/1/2/8/5/12856329/vcld_summary_report.pdf and https://oro.open.ac.uk/39646/1/vcld_summary_report.pdf.

5 Alexiou et al., "Valuing," 7.

6 Martha Bergmark, executive director of Voices for Civil Justice, quoted in Bryce Covert, "Poor People Don't Stand a Chance in Court," Think Progress (website), May 11, 2016, https://thinkprogress.org/poor-people-dont-stand-a-chance-in-court-7e46bd4e5719.

the garnishment of their wages; eviction from their home; harassment at work; or other family, work, and money issues.[7] But most cannot afford lawyers to advocate for their rights or to advise them on how to navigate this system. Many people try to represent themselves in court[8]; they try to get free legal help from a legal aid lawyer but are turned away because of inadequate funding; or they rely on low-quality information on the Internet.[9]

Another profound issue served as the genesis for the Escambia Project: Many people who have legal problems never do anything at all to address them.[10] The American Bar Foundation's 2014 Community Needs and Services Study, written by Rebecca Sandefur, revealed that many middle- and low-income people in the United States regularly experience events and situations that have civil legal aspects that raise civil legal issues, and that are potentially actionable under civil law.[11] Two-thirds of individuals surveyed reported experiencing one or more such situations in the 18 months prior to the survey.[12] Most of these people handled these events completely outside the context of the formal justice system.[13]

The Community Needs and Services Study also showed that only about one-fifth (22 percent) of those with a civil legal problem sought any kind of assistance at all.[14] Of the remaining 78 percent, only a small minority reported the cost of legal help as a concern.[15] According to Sandefur, a "more important reason that people do not seek assistance with these situations, in particular assistance from lawyers or courts, is that they do not understand these situations to be legal."[16] People know they have problems but are not aware that a legal remedy might be available.

Our team took this sizeable information gap as a core challenge that could contribute to the many interrelated problems of the civil justice system: How do we get legal help to people who don't even know they have a legal problem? Our initial hypothesis was that if we know where people already go for information and help in their community—health care and human services providers, public libraries, schools, and places of worship—we could build a gateway using these trusted community providers. According to a Canadian study, "[m]any people, especially those who have low incomes or who are vulnerable, do not receive help with their legal problems or do not find their way to the legal service providers they need without intervention from a trusted intermediary in a community organization."[17] A key initial tactic of the Escambia Project, then, was to connect with trusted intermediaries in the community.

The Partner, the Place, and the People

In Escambia County, our first and most important trusted intermediary was Pathways for Change—a community center in Pensacola, FL, located in an unassuming, one-story building within

7 Legal Services Corporation, *The Justice Gap: Measuring the Unmet Civil Legal Needs of Low-income Americans* (Washington DC: Legal Services Corporation, 2017), https://www.lsc.gov/media-center/publications/2017-justice-gap-report.

8 Amy C. Henderson, "Meaningful Access to the Courts: Assessing Self-Represented Litigants' Ability to Obtain a Fair, Inexpensive Divorce in Missouri's Court System," UMKC Law Review 72, no. 2 (2003): 571; and D. Gustafson et al., "Pro Se Litigation and the Cost of Access to Justice," *William Mitchell Law Review* 39, no. 1 (2012): 32–54.

9 Catrina Denvir et al., "Surfing the Web—Recreation or Resource? Exploring How Young People in the UK Use the Internet as an Advice Portal for Problems with a Legal Dimension," *Interacting with Computers* 23, no. 1 (2011): 96–104; and Margaret Hagan, "The User Experience of the Internet as a Legal Help Service: Defining Standards for the Next Generation of User-Friendly Online Legal Services," *Virginia Journal of Law and Technology* 20, no. 2 (2016): 395–465, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2942478.

10 Daedelus, *Journal of the American Academy of the Arts and Sciences,* Winter 2019, Access to Justice. AMACAD (https://www.amacad.org/daedalus/access-to-justice) features 24 essays that examine the national crisis in civil legal services facing poor and low-income Americans. It includes Access to What? by Rebecca L. Sandefur. Sandefur's seminal research and writings form the basis for much of what we know about the civil justice gap. Rebecca L. Sandefur, *Access to What?* Daedelus, *Journal of the American Academy of the Arts and Sciences,* Winter 2019, Access to Justice Issue: 49–55, https://www.amacad.org/sites/default/files/publication/downloads/19_Winter_Daedalus_Sandefur.pdf (accessed March 8, 2020).

11 Rebecca Sandefur, "Accessing Justice in the Contemporary USA: Findings from the Community Needs and Services Study," (paper presented at the American Bar Association Annual Meeting, Boston, MA, August 8, 2014), 3, http://www.americanbarfoundation.org/uploads/cms/documents/sandefur_

accessing_justice_in_the_contemporary_usa._aug._2014.pdf.

12 Sandefur, "Accessing Justice."

13 Sandefur, "Accessing Justice."

14 Sandefur, "Accessing Justice."

15 Sandefur, "Accessing Justice."

16 Sandefur, "Accessing Justice," 3. See also Legal Services Corporation, "The Justice Gap: Measuring the Unmet Civil Legal Needs of Low-Income Americans, Executive Summary" (Washington, DC: Legal Services Corporation, 2017), https://www.lsc.gov/sites/default/files/images/TheJusticeGap-ExecutiveSummary.pdf.

17 Law Foundation of Ontario, "Trusted Help: The Role of Community Workers as Trusted Intermediaries Who Help People with Legal Problems" (Ontario, Canada: Law Foundation of Ontario, 2018), 4, http://www.lawfoundation.on.ca/wp-content/uploads/LFO_TrustedHelpReport_Part1_EN.pdf.

18 Pathways for Change (website), https://www.pathwaysforchange.org (accessed September 27, 2018).

19 The county health rankings, involving more than 30 factors related to well-being, placed Escambia fifty-third in the state. "Florida," County Health Rankings & Roadmaps (website), http://www.countyhealthrankings.org/app/florida/2018/rankings/escambia/county/outcomes/overall/snapshot.

20 Florida Kids Count's annual child well-being index ranks the overall quality of life of children in each of Florida's 67 counties. The rankings include 16 indicators in the categories of economic well-being, educational well-being, health well-being, and family and community. "Florida Child Well-Being Index," Florida Kids Count (website), http://www.floridakidscount.org/index.php/counting-for-kids-blog/florida-child-well-being-index.

21 See https://www.census.gov/quickfacts/escambiacountyflorida. According to the *New York Times*, an overwhelming percentage of children born poor in Escambia County stay poor. Escambia ranks dead last in Florida, and nationwide, it ranks 2,432 out of 2,478 counties in measuring whether poor children escape poverty when they grow up. Only two percent of the counties in the nation fare worse. Gregor Aisch et al.,

walking distance of three area housing projects.[18] The programs that Pathways for Change offers are designed to address the barriers that stand between poverty and self-sufficiency: education, transportation, childcare, and job training. Its services include substance abuse treatment, mental health counseling, parenting and financial literacy skills training, and more. Approximately 500 people walk through the building's double glass doors each month for an array of social and educational services. During the Escambia Project, Pathways for Change was the key partner and the community's laboratory.

Escambia County is the westernmost county in Florida's panhandle—a long, narrow slice of land stretching from the Alabama border on the north to the Gulf Coast on the south. A mix of rural and urban, its beachside towns are strung side by side like a tightly beaded necklace, leaving the central and northern portions of the panhandle with few residents or amenities. Tourism and the military are its major sources of employment. Pensacola, the county's largest town, is located one hour east of Mobile, AL.

In Escambia County, the graduation rate, per capita income, preterm births, and kindergarten readiness are below the state average.[19] Of Florida's 67 counties, Escambia ranks forty-first in child well-being.[20] In addition, 15.2 percent of the population lives in poverty, and one in four children live in poverty.[21] A minimum wage worker in Escambia County must work 80 hours per week to afford a two-bedroom apartment at fair market value.[22] These measures reveal the community and context for the Escambia Project and also explain why our core group of local leaders—from Pathways for Change, the Florida Bar Foundation, and Legal Services of North Florida—were interested in finding new ways to connect people to meaningful assistance. When Margaret Hagan joined the project, she posed the following questions to us to direct how a design approach could be useful to the civil justice system challenges in Escambia County:

- What would legal help look like if it were redesigned from the ground up?
- What if the help were woven throughout the community for people to find and use on their own terms?
- What if it were created for people to find and use in the easiest, most supportive ways?
- And what if we didn't even frame the help as "legal"—but just as one more part of a wider set of services?[23]

Design Sprint Activities: Capturing the Community Voice

The morning of the kick-off design sprint for the Escambia Project arrived. Small groups of people filtered into the meeting room that Monday morning, chatting softly or catching up with co-workers, neighbors, or old colleagues. The group included legal

aid attorneys, community activists, social service providers, funders, social work interns, volunteers from community groups, Pathways clients, corporate social responsibility representatives, law professors, teachers, and more. This collective of people was intent on creating a better network of services and government systems for people who need them. None of us knew what to expect. Still, Margaret Hagan had offered these words, which helped to guide us:

> It's about really respecting, listening to, and following the community voice. So not just thinking about who the different community segments are or thinking about community members as statistics, but going out, inviting them into a shared space, and asking them explicitly: "If you had to create something new, what do you want? Let's hear your ideas. Let's help you refine them, and let's help you prioritize them. You set the agenda for us.[24]

Our three-day schedule was structured around the flow of the design process. Margaret planned for us to get through at least one design cycle: identifying core needs, sketching out possible initiatives, soliciting feedback from a range of stakeholders, and then refining our proposed pilot into a more certain vision. Pathways CEO Connie Bookman coordinated many different community stakeholders to participate as team members, interviewees, testers, and droppers-in. Some served on teams and stayed for the whole three days and others came in for short spurts. Our policy invited them to stay with us for as long as they could—to make the designs better—and leave when they had to.

In addition to the teams going through the design process, specific teams of lawyers who were working on other dimensions of civil justice improvements in Florida also joined us. These teams—the Community Lawyering training team and the Community Building and Engagement team—joined us at the beginning and the end of the sprint for input and feedback. And it was chaos.

In our small groups, we drew cartoon personas, considered what legal issues might emerge for them, imagined aloud what problems our users might need to solve, and chose a focus for our efforts. We also ate chocolate.

On the second day, we brainstormed ideas within our groups, chose one to build, sketched prototypes of the ideas, and tested them. A group of men from Pathways Residential Treatment (a program that Pathways for Change runs, as an alternative to prison for non-violent offenses) sat down at each table to give us their reactions to our ideas. And we all ate chocolate together.

"The Best and Worst Places to Grow Up," *New York Times,* May 4, 2015, https://www.nytimes.com/interactive/2015/05/03/upshot/the-best-and-worst-places-to-grow-up-how-your-area-compares.html.

22 National Low-Income Housing Coalition (NLIHC) http://www.northescambia.com/2018/06/out-of-reach-the-high-cost-of-rental-housing-in-escambia-county. A report by the PEW Charitable Trusts defines "rent burdened" as "spending 30 percent or more of pretax income on rent" and notes that "[r]ent-burdened households have higher eviction rates, increased financial fragility, and wider use of social safety net programs, compared with other renters and homeowners." The Pew Charitable Trusts, *American Families Face a Growing Rent Burden,* April 19, 2018, https://www.pewtrusts.org/-/media/assets/2018/04/rent-burden_report_v2.pdf.

23 Margaret Hagan, "Community Design for New Modes of Legal Service: The Escambia Project," *Medium,* February 27, 2017, https://medium.com/legal-design-and-innovation/community-design-for-new-modes-of-legal-service-the-escambia-project-35899119862e.

24 Margaret Hagan, Escambia Project outcomes presentation, Florida Bar Foundation Board of Directors quarterly meeting, Orlando, FL September 2017.

On the third day, we prepared skits to present our project ideas. We had invited Pathways clients, other area nonprofits, and members of the Escambia community from the private bar, government, education, and business—to eat lunch and chocolate with us. The gentlemen from Residential Treatment also returned. Then we presented our skits and asked them to determine which ideas they wanted to see developed.

Three Priority Prototypes: The Community Decides What Is Most Important

The top three ideas chosen by the community lunch audience were the Smart Intake tool, Justice on the Block (JOTB), and One Stop Life Shop. Ultimately, the project's steering committee decided we could continue with all three and potentially implement them in a coordinated way. Margaret Hagan reflected on their value:

> The three ideas may not be revolutionary in and of themselves. What is revolutionary is the involvement of the community from the beginning and throughout. Honoring the users, the community members, as the leaders—flipping that model—means that there's a lot more community investment and involvement throughout. If the challenge is actually engaging people with the legal system, this process starts to show how we can do that.[25]

Smart Intake Tool

The Smart Intake tool is meant to be used by trusted intermediaries—like community center workers, medical professionals, or others—in their regular client intake. It is a program that lives alongside their case management system. The tool uses predictive analytics to identify the likelihood that the social service provider's prospective client has one or more legal issues, and it determines with some specificity what kind of legal issues they have. The initial prototype, technologically-speaking a minimally viable product, was developed quickly enough to test at the first Escambia Justice on the Block prototype event. To use the Smart Intake prototype at the initial Justice on the Block event iteration we used a case management system, LegalServer, and the AI tool it has developed, Houston.AI.[26] The Smart Intake product automatically scans the case notes and other data points already entered into a case management system. The goal is then for it to inform the trusted intermediary (who often is not a lawyer) about possible recommendations of legal assistance the client might need, based on a situation the client and intermediary just spoke about.

Because of the technology focus, the Smart Intake team had only three members: IV Ashton, of the legal technology company, Legal Server; Leslie Powell Boudreaux, of Legal Services of

25 Margaret Hagan in a presentation to the Florida Bar Foundation in 2017.

26 IV Ashton's company Legal Server created Houston.AI, which is comprised of a series of micro-services leveraging machine learning, artificial intelligence, and expert systems. See Houston.AI, https://houston.ai/about.html (accessed September 27, 2018). All development and consultation was provided free of charge during the Escambia Project.

North Florida; and Chris Collins, Pathways Operations Director. Escambia Project's Community Building and Engagement team assisted by developing an inventory of legal needs, which were connected with and assigned to questions embedded in the tool. We continued testing Smart Intake technology at the prototype events for the two other ideas: Justice on the Block and One Stop Life Shop.

Justice on the Block

JOTB is designed to get lawyers out into the community where people are, rather than having people come to the lawyers' offices. Volunteer lawyers, legal aid lawyers, and paralegals travel to locations near low-income neighborhoods and on convenient bus routes (or they visit via video conference). JOTB coordinates these visits. The lawyers provide initial consultations to people for free and then help the participants to determine a path for other services and ongoing help. JOTB is designed to make giving pro bono help easier for busy lawyers. It also incorporates an initiative called "phone a friend," through which experienced lawyers make themselves available as counsel to newer lawyers who have uncovered special needs and would like some real-time, on-the-spot coaching as they work with the individual seeking help. The videoconferencing also allows attorneys to be available at a certain time, without requiring the travel.

To prototype the new service, a local attorney and paralegal volunteers co-led a large committee that organized three iterations of JOTB in various location around Escambia County. The Escambia Project's Community Build and Engagement Team, the Escambia Santa Rosa Bar Association, and the University of West Florida Legal Studies Program also collaborated on the service.

The first iteration of JOTB premiered in August 2017 as a walk-in event at Pathways for Change. Pre-registration was not required, and free childcare was available. The Community Build and Engagement Team helped to prepare an exit survey to gauge attendees' experience of JOTB, which helped the team focus on what they might do differently in subsequent iterations. In total, we held three JOTB clinics, each hosted at a different community location.

Since the end of the originally funded design and iteration period in early 2018, Legal Services of North Florida and volunteers throughout the Florida Panhandle have continued to hold JOTB events. Five were held in the first half of 2019. These events have provided critically-needed legal information and assistance in the wake of Hurricane Michael, which devastated the area in mid-October 2018.

One Stop Life Shop

The final initiative, One Stop Life Shop, is a new service that coordinates the delivery of legal help with other service offerings in one convenient location. The goal is for people to come to one event to solve multiple problems, or at least to start on solutions to them. Anyone can come to receive legal support, as well as assistance with driver's licenses, employment, education, food stamps, housing, insurance, finances, health care, and more. The goals are to lower the burden of seeking out help and to incentivize clients to engage with services by having a variety of services in one place and at one time. Clients then also might realize that they need an additional service (e.g., legal assistance) when they come for help with another problem because the services are co-located. From the first event to the second event—four months apart—the number of participating providers grew by 44 percent, and the number of attendees multiplied from 12 to 101.

Reflections

Law school, and the public interest law career that followed, came along later in life for me. I had spent high school and college writing and drawing. In my twenties and thirties, I worked as an advertising agency copywriter and creative director. Life eventually persuaded me that my love for the power of words and art to persuade could and should be used to change lives—not to add to corporate bottom lines. After 25 years of working for and with legal aid, domestic violence, and HIV/AIDS nonprofits, in 2016 I discovered design thinking and Margaret Hagan's work in legal design. It was a discovery—an epiphany—that persuaded me to think very differently about the remainder of my career path.

As I have reflected on the Escambia Project and how it might inform other projects, I see potential lessons and wishes for the future of community-led justice design.

Embrace Uncertainty

I have often heard design thinking referred to as a mindset or a lens. It is a way of observing and listening that transforms what you see and hear. It changes how you engage with those around you, gives you permission to consider and embrace the emotional response of others, and requires you to journey *with* them instead of operating *on* them.

Lawyers tend to be risk-averse.[27] This dominant character trait makes community-led *justice* design challenging. To address the challenge, law professor Caitlin Moon begins her legal-de-

27 Larry Richard, "Can Risk-Averse Lawyers Learn to Embrace Change? An Interview with Dr. Larry Richard," interview by Jathan Janove, Ogletree Deakins (website), January 12, 2016, https://ogletree.com/shared-content/content/blog/2016/january/can-risk-averse-lawyers-learn-to-embrace-change-an-interview-with-dr-larry-richard (accessed September 27, 2018). According to Richard, "people who choose law as a profession tend to have certain personality traits that are highly atypical…. including a high level of skepticism and a strong sense of autonomy. But the most consistent—finding is that lawyers are low on psychological resilience. That is (they are) thin-skinned, defensive in the face of criticism, and score very low on openness to change….The focus is on reducing risk, not on creating or developing opportunities. Moreover, the adversarial system, which focuses on assigning fault or blame, hardly encourages risk taking."

28 Caitlin Moon, Director of PoLI Institute and Innovation Design, Program on Law & Innovation, Vanderbilt Law School telephone conversation with author, September 2017.

sign class with a dive into self-awareness.[28] Inspired by this call for self-awareness, I talk about this challenge here in a very personal way so that others might identify with all or part of my experience. Through the Escambia Project, I had difficulty embracing uncertainty, trusting a "new-ish" process and a relatively unknown community, and letting go of these five tendencies:

- A desire to "over-help" the participants;
- A compulsion to "over-control" the process;
- An inclination to impose top-down solutions;
- A constant striving for perfection or the ideal; and
- A wish to change the whole system at once.

According to Moon, "[y]our empathy is more important than your passion if you're trying to build a solution to someone else's problem."[29] And if the "experts" cannot let go of control over the design of services, the result might be a consensus among *them* about what is best. This expert-led process and consensus can be counter-productive to the goal of creating a sense of community, agency, and ownership.[30] Although I initially resisted letting go, stepping back and trusting the community was important for me. Without community agency and ownership, change is unsustainable.

Make the User Experience Easy and Enjoyable

We often think our job is done once we have produced a product or service that works. But we also should want to know what users are thinking, feeling, and doing before, during, and after they interact with the product or service we provide. This lesson applies to courts, legal aid programs, self-help centers, and other government agencies providing free or low-cost legal information or assistance. Community partners and members deserve our respect, consideration, and empathy—not just our expertise.

We gave considerable thought to the user experience in planning and assessing JOTB and One Stop Life Shop. Legal issues involve some of the most challenging and emotionally upsetting obstacles in our lives. Could we make getting legal help easy, if not enjoyable? With these two initiatives, we thought about spreading the word, transportation concerns, and the specific needs of working families—such as free day care or evening and weekend hours of service. We made sure that everyone received a warm welcome upon arrival and that the waiting room was comfortable, stocking it with snacks and refreshments. Our student "concierges" told the attendees where the restrooms were, how long the wait would be, and what they could expect, including that we would be doing an exit interview.

Service providers also are users whose experiences matter. For example, we had to make sure that each service provider at

29 Caitlin Moon (@inspiredcat), "Your empathy is more important than your passion if you're trying to build a solution to someone else's problem," Twitter, September 21, 2018.

30 See Henry Sanoff, "Multiple Views of Participatory Design," *Middle East Technical University Journal of the Faculty of Architecture* 2 (2006), https://www.researchgate.net/publication/26453208_Multiple_Views_of_Participatory_Design (accessed September 27, 2018). According to Sanoff, "There is a dark side of consensus in that it protects the system from change and results in homogeneity (Muldoon, 1996). The view is that agreement-oriented processes have achieved their goal by pressuring people toward an uneasy unanimous goal, that they are a manipulated form of consent. The pressure for consensus has the potential to inhibit the argumentative process, as well as to silence those who are marginalized."

One Stop Life Shop had a positive experience so that they might want to participate again. With each interaction and iteration, we asked all the participants to tell us what worked and what didn't, how they felt, and what they thought. We used this information to improve the product and the experience.

Of course, none of these attempts at easy and fun went as smoothly as it sounds. But I learned that even striving for an easy and enjoyable experience helps to create a better result.

Devote an Entire Team of People to Assessing Community Needs and Sustaining Community Engagement

To strengthen relationships and trust and capture a diversity of perspectives and input, the Escambia Project had a collaborative, cross-functional, multi-team structure. Most importantly, joining the project design and protoyping teams and the Community Lawyering Team was the Community Building and Engagement Team. Andrea Costello and Natalie Maxwell, experienced organizers from Florida Legal Services, co-led the Community Building and Engagement Team. This team's members were local: employees at United Way agencies, Pathways for Change staff and clients, a Legal Services of North Florida attorney, a private law firm paralegal, a retired teacher, a social worker, and a banker. The team's mission was to ensure the engagement of community members and collection of their feedback throughout the process; to research and determine community needs; to develop community-friendly tools; to coach everyone on community culture and communications; and to identify, develop, and share community stories around the process. Legal aid lawyer Andrea Costello described the team's ethos:

> As a team we engaged with the community throughout the design, building, implementation, and testing process to make sure the community members were involved in every single aspect of this project. We wanted to ensure that their needs and their feedback were heard and [that] they had a seat at the table… [and] to see that they were actively participating and involved in everything that we did.[31]

When presenting to the Florida Bar Foundation's Board of Directors on the Escambia Project in November 2017, Costello noted, "I have worked on prisoner's issues for at least 15 years of my career. This is the first time I have ever experienced ex-offenders having a partnership role in determining how best to address their legal issues. I am thrilled to have seen this moment." Having an independent workgroup with the requisite community-building skill sets was invaluable.

31 Andrea Costello, co-leader (with Natalie Maxwell) of the project's Community Building and Engagement Team, Escambia Project Outcomes presentation, Florida Bar Foundation Board of Directors quarterly meeting, September 2017).

The team's job was to ensure the community voice was heard and accounted for in every aspect of the project. But what about when the project was over? That leads to my fourth lesson.

Increase the Community Engagement Capacity of Local Service Providers and Stakeholders

As the Community Building and Engagement Team focused on building community outreach, the Community Lawyering Team identified how to create lasting change in the legal community:

> …We really got to dig in with the legal staff, paralegals, and attorneys at the legal service organizations about embedding some of these community engagement values—not just during the design process but over the long haul—so that this can be a natural part of the work that we do. This allows us to really understand what issues are most important to directly impacted marginalized communities. So we can focus our energies there and not on what we think are the most important issues. When we listen to those communities to hear what solutions the community wants to see implemented, it makes us more effective and efficient.[32]

I decided to add this community-lawyering training component to the Escambia Project because the Florida Bar Foundation had long planned to support community-lawyering training statewide, and this project was the perfect opportunity to develop and test the curriculum. The training, co-led by Alana Greer and Dorcas Gilmore, was a wonderfully complementary strategy for community-led design. Critical to community lawyering is a "recognition of the importance of leadership by organized constituent groups within the communities served. Additionally, it is important that the advocates' skills be used not only to gain benefits for those communities but also to consciously build organizational power and community leadership," states Charles Elsesser.[33] Because most legal aid and pro bono lawyers are accustomed to identifying legal issues, rather than community challenges, and to representing individuals, rather than groups, teaching local attorneys what they need to do to support the community during and after the justice design process was critical. Communities considering a similar process would likely want to provide similar trainings before or concurrently with their endeavors.

Alana and Dorcas developed webinars and put on two days of classes in Pensacola, FL, that focused on community lawyering. Seeing local legal aid members map out community relationships, take a deep dive into the history of racial injustice in Florida, and

32 Alana Greer, Co-Leader (with Dorcas Gilmore) of the Escambia Project's Community Lawyering Training Team. Escambia Project Outcomes presentation, Florida Bar Foundation Board of Directors quarterly meeting, September 2017).

33 Charles Elsesser, "Community Lawyering—The Role of Lawyers in the Social Justice Movement," *Loyola Journal of Public Interest Law* 14, no. 375 (Spring 2013): 45–73.

discuss why root-cause analysis around poverty is so critical was fascinating. As Alana remarked at the 2017 Florida Bar Foundation presentation, "if you create this new process and new tools to provide greater legal services to people, you also have to train the lawyers themselves how to listen to the community voice, how to use the community voice, how to be partners with the community in a very different way then [than] they might be used to doing."[34]

The importance of anticipating the community's "now what" response and planning early for the longer term questions—particularly when a funder's initial investment of funding and staff ends—cannot be overstated.

A Vision of Community-Led Justice Design

In addition to the lessons learned, my involvement in the Escambia Project has left me with a short wish list. The experience, even with its highs and lows, convinced me that community-led justice design is an incredibly powerful transformational tool if thoughtfully supported. I have four wishes for the future.

Leadership from Funders

Justice funders large and small should encourage *and* fund community-led design as part of their transformative change investments. As we found, many resources for this type of process already can be found in the community and can be accessed at low or no cost, including the following:

- Design-thinking expertise, professional facilitation, and student support are available from a local college or university.
- Other volunteers can be recruited to assist in design phases.
- Corporate or other partners donate their time or in-kind products and services.

Still, a multitude of other expenses that accompany such work can be difficult for nonprofits or governmental agencies to bear. For example, projects must have funds to hire a project manager who can serve as a local single point of contact and handle project details, including volunteer tracking, meeting summaries, data, and outcomes collection and compilation. Although not necessarily a full-time job, it requires significant commitment at certain times throughout the process.

In addition, to respect and garner the participation of community members and others with local expertise, travel reimbursement must be considered. For example, meaningful participation by lower income community members requires funding

34 Alana Greer, Co-Leader (with Dorcas Gilmore) of the Escambia Project's Community Lawyering Training Team. Escambia Project Outcomes presentation, Florida Bar Foundation Board of Directors quarterly meeting, September 2017.

for transportation, childcare, and lost wages. Volunteers and testing participants need to be fed, and the latter might need to be compensated or incentivized with gift cards or other forms of compensation.

And finally, while the prototypes you are developing for iteration are minimally viable products, services or events they will cost something to produce. How you design your iterative process will help determine the costs involved, but you won't know what you are iterating or testing until the community priority setting phase.

A Collaborative Network of Practitioners

We need a network of practitioners of legal design who can strive for the following goals:

- Offer affordable expertise to guide and facilitate justice co-design across the country.[35]
- Build internal design-thinking capacity in each community and institution with which they work.
- Engage with and involve undergraduate and graduate students whenever possible.
- Share information and learn from each other.
- Ensure an inclusive and equitable process.

Design thinking, co-design, and community-led design can and should be integrated into civil justice systems and into program transformation and innovation work. But where might we find affordable expertise? The contributions made by the legal design communities at Stanford University, University of Arizona, Vanderbilt University, Northeastern University and other law schools cannot be underestimated. Yet we need additional ways to add design thinking approaches to in-house and consultant teams as a prerequisite to creating new or modified products and services. This expertise needs to be easy to find. In addition, inclusivity and equity must be intentionally designed into every engagement. "Systems of oppression, inequalities, and inequities are by design. Shouldn't we use design to dismantle them?"[36]

Inspiration from Abroad

We should examine global examples of co-design in the public service sector for clues as to how we might support larger scale engagement of the public in transforming the justice system.

Globally, governments increasingly are investing in co-design "as a design-led process, involving creative and participatory principles and tools to engage different kinds of people and knowledge in public problem solving."[37] For example, public sector innovation units "are increasingly being established by governments to bring new insights and approaches to policy design and

35 With this level of expansion, the justice system gains access to the myriad of tools, the depth of knowledge, and the breadth of bench that a collaborative network might provide. Larger consultancies could develop an access-to-justice consulting arm that has a smaller profit margin, just as other business management consultancies have done in creating government and nonprofit practices on top of their more lucrative ones.

36 Creative Reaction Lab (website), "Equity-Centered Community Design," http://www.creativereactionlab.com/eccd-field-guide (accessed June 20, 2019).

37 Yin Zeng (Cindy), "Is Co-Design A Realistic Idea in Public Problem Solving?" UX Collective, August 8, 2018, https://uxdesign.cc/is-co-design-a-realistic-idea-in-public-problem-solving-73c28308e4f (accessed September 27, 2018).

the delivery of public services…. This does not consider universities, non-government units, and mixed-organization types regularly undertaking public sector innovation work.[38]

The world's first public sector innovation lab, Denmark's Mindlab, was created in 2002. It has advised other governments and large international organizations—such as the United Nations and the European Union–on innovation strategy and the organizational needs for implementing it. Although a change in political priorities led to the closing of MindLab in 2018, Christian Bason, a former head of MindLab, believes that the innovation lab had a great influence on Danish institutions:

> In Denmark, many municipalities, local government bodies and state administrations work with user engagement and collaborative innovation methods now. They may not call it co-design, or use other innovation terms, but there's been a major shift in how organizations think and work.[39]

MindLab's influence was also international, inspiring a number of similar labs across the globe: OPM Innovation Lab in Washington, DC, Laboratorio Para La Ciudad in Mexico City, and Human Experience Lab in Singapore.[40] We should not be afraid to borrow ideas from MindLab, other innovation labs, or other international examples of co-design.[41]

Small, Local, Now

Start small and local and start now to inspire larger, long-term system transformations. Make radical or comprehensive changes in one small area, proceed community by community. Light many small fires and ultimately you create much broader illumination.

The culture of rural communities is often a mix of independence, distrust of "outsiders," and an attitude of "we take care of our own." This culture is a great strength and sometimes a great weakness. When disaster strikes an individual member of a rural community, neighbors gather to help. At the same time, many people in rural areas are reluctant to seek help from "outsiders," such as social and legal service providers, and to "admit" to having or experiencing financial difficulties, mental illness, disabilities, or domestic violence. As Pam Smith writes, "[o]ne of the strong values and beliefs of the rural culture is that one must become part of the community and contribute to its existence."[42] Accordingly, a co-design process with a framework flexible enough to embrace local needs might be particularly well-suited to rural areas, where culture is inseparable from place.

38 Piret Tonurist et al., "Discovering Innovation Labs in the Public Sector," Working Papers in Technology Governance and Economic Dynamics no. 61, Tallinn University of Technology, Ragnar Nurkse School of Innovation and Governance (2015/6), https://pdfs.semanticscholar.org/adc5/021cb863d386401f5b8221185ad565beb89b.pdf. See also Emma Puerari et al., "Co-Creation Dynamics in Urban Living Labs," (2018) *Sustainability* 2018, 10(6), 1893; https://doi.org/10.3390/su10061893 (accessed June 6, 2018).

39 Christian Bason, interviewed by Jennifer Guay, "How Denmark Lost Its Mindlab: The Inside Story," Apolitical (website), June 5, 2018, https://apolitical.co/solution_article/how-denmark-lost-its-mindlab-the-inside-story/.

40 See, respectively, Lab OPM (website), "Transforming Government by Design," U.S. Office of Personnel Management, https://lab.opm.gov/; Laboratoria Para La Ciudad [Laboratory for the City] (website), government of Mexico City, https://labcd.mx/ (accessed September 27, 2018); and Alexander Lau et al., "Design-Led Innovation in the Singapore Public Service" (presentation) (Singapore: The Human Experience Lab, Public Service Division, 2016), https://www.capam.org/files/2016BiennialPresentations/DesignledInnovationInTheSingaporePublicService-AlexanderLau.pdf.

41 Stephen Moilanen, "When to Use User-Centered Design for Public Policy," *Stanford Social Innovation Review*, May 15, 2019, https://ssir.org/articles/entry/when_to_use_user_centered_design_for_public_policy (accessed June 20, 2019). Writes Moilanen, "[i]n the recent book, *Lean Impact*, former Google executive and USAID official Ann-Mei Chang made an incisive and compelling case for why the social sector stands to benefit from [the user-centered design] approach. According to this line of thinking, we should be driving toward a world where government designs policy with an eye toward the individuals that stand to benefit from—or that could be hurt by—changes to public policy.... As leading design thinking theorist Jeanne Liedkta notes in her book, *Design Thinking for the Greater Good*, 'Innovation and design are [currently] the domain of experts, policy

Conclusion

How does change happen?

> "Social innovation is the process of developing and deploying effective solutions to challenging and often systemic social and environmental issues in support of social progress. Social innovation is not the prerogative or privilege of any organizational form or legal structure. Solutions often require the active collaboration of constituents across government, business, and the nonprofit world."[43]

In the World Justice Project's 2016 Rule-of-Law Index, the United States ranked ninety-fourth of 113 countries in "accessibility and affordability of civil justice."[44] This ranking is not particularly surprising, considering that studies have shown that the "help legal-services offices most commonly provide… is not what people who qualify for aid are most likely to seek help for" and that moderate and "low-income Americans rarely seek professional help for the legal problems they most commonly experience."[45] As Sandefur asserted to Caplan, "this pattern suggests we need to completely rethink our outreach strategies—to radically rethink how we connect people to services."[46]

As we experienced with the Escambia Project, co-design is a great fit for this challenge. Co-design, done well, can empower communities, increase agility, and drive systems change.

Let's get started.

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makers, planners and senior leaders. Everyone else is expected to step away.'"

42 Pam Smith, "Whose Culture Is It Anyway? Social Working Within a Rural Community," *Aotearoa New Zealand Social Work* 25, no. 1 (2013): 17, https://anzswjournal.nz/anzsw/article/download/90/193 (accessed September 27, 2018).

43 Stanford University, Soule, Malhotr, Clavier https://www.gsb.stanford.edu/faculty-research/centers-initiatives/csi/defining-social-innovation (accessed March 8, 2020).

44 Lincoln Caplan, "The Justice Gap: America's Unfulfilled Promise Of 'Equal Justice Under Law,'" *Harvard Magazine* 120, no. 2 (November-December 2017): 65, https://harvardmagazine.com/2017/11/unequal-justice-america (accessed September 27, 2018).

45 Caplan, "The Justice Gap," 65.

46 Caplan, "The Justice Gap," 65.

A Design Space for Legal and Systems Capability: Interfaces for Self-Help in Complex Systems

Margaret Hagan, F. Kürşat özenç

Introduction

How effective is a legal system when people cannot understand how to use it? Many people end up in the civil justice system as self-represented litigants, having to grapple with conflicts related to their family, employment, finances, housing, and health.[1] When they do not have a lawyer to advise them, the challenge of navigating the procedures and substance of the system can be overwhelming. A person's "legal capability"—their knowledge of how legal and government systems operate, and their ability to form strategies to use these systems to protect their interests—varies greatly and can be influenced by class, race, and age.[2]

Can design be leveraged to increase people's legal capability? How can information, options, and services be provided with a greater focus on people's needs, behaviors, and aspirations, so that people: (1) are better equipped with the knowledge they need to navigate this system, and (2) are more likely to engage in decision-making, commitments, and follow-through to proceed through the system? If we can define this design space for legal contexts, can we then connect with researchers and practitioners working in similarly complex, bureaucratic systems—like finance, healthcare, insurance, government services, and others—to build a cross-domain set of patterns, strategies, and best practices?

This article presents our initial work at Stanford Legal Design Lab to build a design space for enhancing people's legal capabilities in different parts of the civil justice system. We present the models from recent exploratory workshops that aimed to craft more effective presentations of complex information to laypeople about the legal system. We also document the insights gained from design research with people in the legal system—insights about what kinds of cues, nudges, and message frames most effectively engage them and about common user journeys and phases of system navigation. From this work, the team crafted an initial set of design patterns and submitted them for critical review by multiple design experts with experience in complex systems. This design research indicates promising areas for increasing legal capability, as well as enhancing user capability in other systems.

1 See, e.g., National Center for State Courts (website), "Self-Representation Resource Guide," https://www.ncsc.org/Topics/Access-and-Fairness/Self-Representation/Resource-Guide.aspx (accessed July 18, 2019); and Lucas L. Sudeall and D. Meals, "Every Year, Millions Try to Navigate U.S. Courts Without a Lawyer," The Conversation (website), 2017, https://theconversation.com/every-year-millions-try-to-navigate-us-courts-without-a-lawyer-84159.

2 Nigel J. Balmer et al., "Knowledge, Capability and the Experience of Rights Problems: Report for PLEnet" (London: Public Legal Education Network, 2010), https://www.lawforlife.org.uk/wp-content/uploads/2010/05/knowledge-capability-and-the-experience-of-rights-problems-lsrc-may-2010-255.pdf.

https://doi.org/10.1162/desi_a_00604

The Challenge of Enhancing Legal and System Capability

People are embedded in increasingly complex systems: the courts, government services, health care, financial services. They have to navigate insurance, personal finance, mortgage loans, estate planning, immigration, and taxes, and they are expected to be able to do so on their own, to access the full benefits from them, and to avoid being penalized by them.

Unfortunately, these systems often are difficult for most people to navigate effectively.[3] Designers, service professionals, and technologists working in these systems try to help people navigate the systems by equipping them with enough expertise about the system to protect themselves. This broad challenge includes explaining the basics of the systems, the pathways open to people, and the outcomes that can result.

Professionals working in these systems face the challenge of designing for self-help.[4] Human-to-human services and advice for people struggling through the system generally are not offered, so the challenge instead is to help people build their capability to do it on their own. The general challenge is to adequately support laypeople who have no formal education about or experience with a particular complex system, so that they can engage, comprehend, and navigate the system with minimal human-to-human support.

Legal Capabilities for Access to Justice, as One System Challenge

In the past two decades, a community of researchers and practitioners has formed around the notions of making civic and government systems more accessible, and of making the criminal and civil justice systems more human-centered and technology-enabled.[5] In particular, one zone for government innovation has been the access-to-justice movement, focused on policy, technology, and design interventions that improve how people can use the civil justice system, regardless of whether they can afford a lawyer. The access-to-justice innovation community brings human-centered metrics of design—including usability, usefulness, and engagement—to the civil justice system to address processes for resolving family, employment, money, and housing problems.[6]

What core challenge motivates those who work to improve access to justice? On its face, the challenge of access to justice might be seen to be around "access": Are the institutions within the justice system, including the courts, legal aid groups, and for-profit lawyers, equally accessible for people to find and use—regardless of their finances or demographics?[7]

The nascent scholarship on "legal capabilities," emerging out of the United Kingdom, Australia, and Canada, points toward another framing and makes this question of equal access more practical and designerly. The notion of legal capabilities stems from Martha Nussbaum's focus on "capability" as a key part of poverty

3 See John G. Levi, "On Legal Services for the Poor," *Bulletin of the American Academy of Art & Sciences* 68, no. 4 (Summer 2015): 44–5, https://www.amacad.org/multimedia/pdfs/publications/bulletin/summer2015/bulletin_Summer2015_Professions_Levi.pdf; Institute of Medicine (US) and National Academy of Engineering (US) Roundtable on Value & Science-Driven Health Care, "Engineering a Learning Healthcare System: A Look at the Future: Workshop Summary," *Healthcare System Complexities, Impediments, and Failures* (Washington DC: National Academies Press 2011): 3, http://www.ncbi.nlm.nih.gov/books/NBK61963/; and Laura Sullivan et al., "Navigating an Unclear Path: Preparing for Retirement in the 21st Century," Leveraging Mobility series 6 (Waltham, MA: Institute on Assets and Social Policy, 2016).

4 Self-help is the common phrase used in the civil justice system to describe services that professionals can distribute to the public to help them do legal tasks without advice from or relationship with a lawyer. See Richard Zorza, *The Self-Help Friendly Court: Designed from the Ground Up to Work for People Without Lawyers* (Williamsburg: National Center for State Courts, 2002); see also, D. James Greiner et al., "Self-Help, Reimagined," *Indiana Law Journal* 92, no. 3 (2017): 1119–73, https://www.repository.law.indiana.edu/ilj/vol92/iss3/6/.

5 For the former, see, e.g., Knight Foundation, *Assessing Civic Tech: Case Studies and Resources for Tracking Outcomes,* (March 2015), http://www.networkimpact.org/civictecheval/; Christian Bason, "Discovering Co-Production by Design," *Public and Collaborative: Exploring the Intersection of Design, Social Innovation, and Public Policy,* eds. Ezio Manzini and Eduardo Staszowski (New York: DESIS, 2013), http://nyc.pubcollab.org/files/DESIS_PandC_Book.pdf; Kees Biekart, "Contributing to Civic Innovation Through Participatory Action Research," *European Public & Social Innovation Review* 2, no. 1 (2017): 2529–9824. For the latter, see The Engine Room "A Global Review of Technology for Legal Empowerment" (New York: Open Society Justice Initiative, 2019); James E. Cabral et al., "Using Technology to Enhance Access to Justice," *Harvard Journal of Law & Technology* 26, no. 1 (2012), 243–300.

and rights; rights are not effective in improving people's quality of life, they note, unless people are capable of making use of these rights.[8] A capability approach considers people holistically as well—not just as a generic "user of a system," but as a particular type of person, who comes from a certain family, community, and macro environment that affects their capabilities and opportunities. If people do not have capabilities to navigate systems like health, work, finances, government, and law, this deficit leads to persistent and deep disadvantages, and to a loss of human and social capital. Meanwhile, increasing people's capability to navigate these systems might break this feedback loop and increase resiliency, social advantages, and long-term well-being.[9]

The legal capability literature asks whether people are capable of using a system effectively, taking into account their knowledge, skills, and psychological readiness.[10] Are people able to discover that this system exists and has value for dealing with their problems? Are they able to understand the information and services of the system, to orient and comprehend it? And are they able to carry out tasks, make strategic decisions, and otherwise follow through on navigating this system toward the best possible outcome for their problem?

A Design Space for Enhancing Legal Capabilities

The legal capability frame has mainly been used in relation to measuring the capacity of different people—to see whether they are capable of navigating the current version of the legal system.[11] However, the frame also can offer a designerly approach that looks at what new interventions or system changes might be used to increase people's capability in the system. What might empower people to have greater knowledge, skills, and readiness for this system, or what might better align the system with people's knowledge, skills, and psychological states? Design might play a key role in addressing legal capability breakdowns. Whether as visual design, interaction design, service design, or organizational and regulatory design, designers' work can begin to augment people's legal capability using techniques that have been proven in other fields to educate people and engage them in completing complex tasks in bureaucratic systems.

In this article, we propose that a design space can be built around the challenge of enhancing legal capabilities, or person-to-system capability matching, to create new interventions that increase access to justice. A design space would be a standardizing framework for both design practitioners and researchers to use when trying to help people navigate complex systems. The space might include resources like patterns, framings, protocols, vocabulary, maps, and other established knowledge to guide the design and evaluation of future interventions. The main goal is to build a

6 Ronald Staudt, "All the Wild Possibilities: Technology That Attacks Barriers to Access to Justice," *Loyola Law Review* 42, no. 10 (2008), http://heinonline-backup.com/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/lla42&section=43; Charles Owen et al., *Access to Justice: Meeting the Needs of Self-Represented Litigants* (Chicago: Illinois Institute of Technology, 2001); Shannon Salter and Darin Thompson, "Public-Centered Civil Justice Redesign," *McGill Journal of Dispute Resolution* 3 (2016): 113–36; Victor D. Quintanilla, "Human-Centered Civil Justice Design," *Penn State Law Review* 121, no. 3 (2018), http://www.pennstatelawreview.org/wp-content/uploads/2017/05/Article-3.3-Quintanilla-Final.pdf; and Margaret D. Hagan, "A Human-Centered Design Approach to Access to Justice: Generating New Prototypes and Hypotheses for Intervention to Make Courts User-Friendly," *Indiana Journal of Law and Social Equality* 6, no. 2 (2018): 199–239, https://www.repository.law.indiana.edu/cgi/viewcontent.cgi?article=1083&context=ijlse.

7 Deborah L. Rhode, "Access to Justice," *Fordham Law Review* 1 (2011): 1785–819, https://doi.org/10.1525/sp.2007.54.1.23.

8 Martha C. Nussbaum, "Capabilities and Human Rights," *Fordham Law Review* 66, no. 2 (1997), http://ir.lawnet.fordham.edu/flr/vol66/iss2/2.

9 See a flowchart of these possible capability-influenced development loops in Kristina Brousalis, *Building an Understanding of Legal Capability: An Online Scan of Legal Capability Research* (Ontario: Community Legal Education Ontario, 2016), 11, http://www.plelearningexchange.ca/wp-content/uploads/2016/09/online-scan-legal-capability.September-2016.final_.pdf.

10 See, e.g., Brousalis, "Building an Understanding"; and Hugh M. McDonald and Julie People, "Legal Capability and Inaction for Legal Problems: Knowledge, Stress and Cost," *Updating Justice* no. 41 (2014): 1–11, www.lawfoundation.net.au/publications.

11 See Balmer et al., "Knowledge, Capability," (2010), for one example of the legal capability framework used as a measurement scheme of people who might be users of the civil justice system,

strategic base of knowledge and guidance that can enhance an ecosystem of people working to address the many and varied problems in people's navigation of complex systems.

A design space would take the benefits of "pattern languages" and supplement them with additional knowledge from social science research and design research. Pattern languages are design tools that identify, name, and illustrate examples of successful solutions for a certain recurring problem, giving designers a set of proven and reusable solutions.[12] Pattern languages can be a "lingua franca" that promotes interdisciplinary work across domains and roles, by giving meta-language definitions and frameworks to professionals who otherwise are working in a narrowly defined field with unique jargons and solutions.[13] Since Christopher Alexander introduced the notion of pattern language to architecture and urban design in 1979,[14] pattern languages have been developed by human-computer interaction (HCI) and design professionals for many specific domains: ubiquitous computing, human–robot interaction, and object-oriented programming.[15] We propose to develop a pattern language and a wider design space for creating Legal Capability and, more broadly, Systems Capability.

From Legal Capability to Systems Capability

Although our interest lies primarily in interventions that would improve people's capabilities in the civil justice system, the movement offers great potential to broaden from this particular challenge to see the linked challenges in many other analogous systems areas. Design- and technology-led movements are expanding into varied bureaucratic systems to simplify and digitize these systems and to improve how people can access and navigate them. Systems improvements apply technology-based tools for various purposes, such as completing paperwork and identifying legal options[16]; applying for relief by, for example, expunging criminal records[17]; making wise financial investments[18]; keeping on track with complicated procedural deadlines[19]; and planning for insurance coverage and financial savings.[20]

Even as new information designs, service designs, and technology projects have emerged, explicit discussion of the design work, outcomes, strategies, and findings across system domains has been lacking. What methods or types of interventions can best improve people's capabilities and outcomes? Designers, technologists, and system experts working in the different domains are not necessarily sharing knowledge or exploring the common design methods that could allow for innovations and insights to spread across the domains.

We see an opportunity for more collaborative and generative interdisciplinary work among professionals working in health care, personal finance, law, government services, and insurance.

to examine how they might be able to use (or not) the system for a life problem.

12 Yue Pan and Erik Stolterman, "Pattern Language and HCI," in *Proceedings of the Extended Abstracts on Human Factors in Computing Systems, CHI '13* (New York: ACM, 2013): 1989, https://doi.org/10.1145/2468356.2468716.

13 Thomas Erickson, "Lingua Francas for Design: Sacred Places and Pattern Languages," *3rd Conference on Designing Interactive Systems* (2000): 357–68, https://doi.org/10.1145/347642.347794.

14 Christopher Alexander, *The Timeless Way of Building* vol. 1 (New York: Oxford University Press, 1979).

15 In ubiquitous computing, see, e.g., Eric S. Chung et al., "Development and Evaluation of Emerging Design Patterns for Ubiquitous Computing," in *Proceedings of the 5th Conference on Designing Interactive Systems: Processes, Practices, Methods, and Techniques* DIS '04 (New York: ACM, 2004): 233–42. In human–robot interactions, see, e.g., Peter H. Kahn et al., "Design Patterns for Sociality in Human–Robot Interaction," in *Proceedings of the 3rd ACM/IEEE International Conference on Human Robot Interaction* HRI '08 (Amsterdam: ACM, 2008): 97–104. In object-oriented programming, see, e.g., Erich Gamma et al., "Design Patterns: Abstraction and Reuse of Object-Oriented Design," in *Lecture Notes in Computer Science* 707 (Berlin: Springer, 1993): 406–31.

16 Cabral et al., "Using Technology," 2015.

17 Sharlyn Grace and Chris Rudd, "Creative Tech Solutions to Juvenile Expungement," American Bar Association Section of Litigation, January 2015, https://www.americanbar.org/groups/litigation/committees/childrens-rights/articles/2015/creative-tech-solutions-juvenile-expungement/.

18 Ilya Pozin, "15 Fintech Startups to Watch in 2015," *Forbes,* December 14, 2014, http://www.forbes.com/sites/ilyapozin/2014/12/14/15-fintech-startups-to-watch-in-2015/.

19 Robert Richards, "Open, Generative, and User Centered: The Potential of SMS-Based Legal Technology for Development," *Innovations* 6, no. 1 (2011): 63–68, http://www.academia.edu/ 693618/Open_Generative_and_User_Centered_The_Potential_

Such interdisciplinarity could promote better interfaces and tools to help lay people navigate all these systems. As we try to build a design space for the discrete community of people working on access to justice innovation, we also are seeking and creating ways to build a broader, networked set of design spaces among people working on analogous systems in other fields. The opportunity to do so arises from a confluence of factors:

- These systems expect users to be able to navigate them, and they penalize those who cannot.
- The people who maintain these systems want to engage people in navigation that is more effective and that allows better user experiences.[21]
- Users of the system are seeking help for navigating the system through better tools, improved user interfaces, and more intuitive systems.

As these demands—from the experts operating the systems and the users of the systems—converge, design professionals have an opportunity to improve users' experience of these systems and their capability to navigate them successfully. Designers can seize this opportunity effectively if they can leverage the commonalities across the domains, adapting models that have been effective in one system and making them work in others. The improvement could happen at two levels: (1) by putting better interfaces and tools on top of a system to enhance user capabilities for navigating it; and (2) by changing the system itself, with better rules, procedures, and organization, to make the system less complex and to reduce the capability level that people need to have to navigate it.

Here, we focus on interventions at the first level: types of interventions that might enhance a person's capability to navigate a complex system. This level is where the majority of current design professionals' work focuses, where interventions can be quicker to implement, and where less funding or political costs need to be covered. The second level, which can be tremendously helpful but also demands more stakeholders' support, is reserved for future work—ideally in combination with the first-level interventions in mind.

Scoping out a Design Space from the Literature

Our team began to develop a design space that would lead to better interventions for people, giving them enhanced capability for navigating complex systems. Our particular focus was on digital tools and visual interfaces, rather than on human and social services, policy and regulatory reform, organizational training, or space and architectural interventions. We proceeded through four stages: (1) explore the literature; (2) conduct a series of design

of_SMS-Based_Legal_Technology_for_Development.

20 Core77 Design, "Society of Grownups," *Core77 Design Awards,* 2015. https://designawards.core77.com/Strategy-Research/32172/Society-of-Grownups.

21 Emi Kolawole, "Law is Ripe for Design Thinking," *The Whiteboard,* January 2014, http://whiteboard.stanford.edu/blog/2014/01/16/margaret-hagan-law-is-ripe-for-design-thinking; Usability.gov (website), "Creating a User-Centered Approach in Government," 2015, http://www.usability.gov/what-and-why/user-centered-government.html.

workshops to create and test new interventions; and (3) draft design patterns and strategies; and (4) secure an expert review of the patterns and strategies.

In our background research, we found many discrete groups of researchers and professionals who work on interventions to improve system usability, people's decision making using complex information, and tech-enabled services to people in a bureaucratic system. We reviewed this literature to inform our workshops, our design patterns and guidance, and our understandings of how to build a cross-domain community of researchers.

Legal Self-Help, Capabilities, and Public Education

Closest to our own system's challenge of civil justice reform, we found a network of lawyers, legal scholars, court administrators, and technologists and designers who have explored how to make better legal self-help interventions. Self-help can be understood as the tools, communication, and services that people going through the legal system can use to "do-it-yourself," as they go through the system. Self-help interventions are an alternative or complement to lawyers' services or other person-to-person guidance. In this literature, we found several proposed models: plain language[22]; cartoon stories to engage people with difficult debt collection procedure[23]; websites and applications to help people fill in forms and prepare for hearings[24]; and improved in-person court resources.[25] This literature also offers some clear understandings of the challenges in educating the public about law and building their capability to navigate the law. For example, this education must overcome litigants' stress and inertia, as well as the complexity of the rules to follow. It not only needs to educate people about the system but also needs to get people to craft and deploy a strategy.[26]

Privacy Policies, Terms of Service, and Mandated Disclosure Design

A robust community of legal scholars, HCI researchers, economists, and government regulators has formed around another systems challenge: the communication of important contract and policy terms. The need for clarity has been particularly salient in the communication of data privacy terms and other "mandated disclosure" warnings. These terms are meant to protect people from harm by equipping them with information to make wise decisions, but people often misunderstand these communications or ignore them altogether.[27] To evaluate how to better engage people and enable them to make strategic decisions in response to the information, researchers and practitioners have been developing a design space to create new visual and interactive presentations of these terms.[28] They have proposed models for nutrition labels[29]; dashboards[30]; financial comparison tables and structured visuals[31]; and guidance informed by artificial intelligence (AI).[32]

22 Natasha N. Jones and Miriam F. Williams, "The Social Justice Impact of Plain Language: A Critical Approach to Plain-Language Analysis," *IEEE Transactions on Professional Communication* 60, no. 4 (2017): 1–18.

23 Greiner et al., "Self-Help, Reimagined."

24 Staudt, "All the Wild Possibilities"; and Vincent Morris, "Navigating Justice: Self-Help Resources, Access to Justice, and Whose Job Is It Anyway ? " *Supra* 82 (2013): 161–81.

25 Zorza, *The Self-Help Friendly Court* and Hagan, "A Human-Centered Design Approach."

26 See, e.g., Greiner et al., "Self-Help, Reimagined." Their work on creating interventions that overcome psychological and cognitive barriers—particularly by deploying "educational" legal materials for actual tasks and decisions—is especially relevant.

27 Aleecia McDonald and Lorrie Faith Cranor, "The Cost of Reading Privacy Policies," *I/S: A Journal of Law and Policy for the Information Society* 4 (2008): 543.

28 Florian Schaub et al., "A Design Space for Effective Privacy Notices," *Eleventh Symposium on Usable Privacy and Security* (Ottawa: Usenix, 2015), https://www.usenix.org/system/files/conference/soups2015/soups15-paper-schaub.pdf; Pedro Giovanni Leon-Najera, "Privacy Notice and Choice in Practice," PhD diss., Carnegie Mellon University, 2014; and Omri Ben-Shahar and Adam Chilton, "Simplification of Privacy Disclosures: An Experimental Test," *The Journal of Legal Studies* 45, no. 2 (2016): 541–67.

29 Patrick Gage Kelley et al., "A 'Nutrition Label' for Privacy," in *Proceedings of the 5th Symposium on Usable Privacy and Security* (Mountain View: Usenix, 2009), https://doi.org/10.1145/1572532.1572538. For a warning label model, see Ben-Shahar and Chilton, "Simplification," 562.

30 Julio Angulo et al., "Towards Usable Privacy Policy Display and Management," *Information Management & Computer Security* 20, no. 1 (2012): 4–17, https://doi.org/10.1108/09685221211219155; and Margaret Hagan, "User-Centered Privacy Communication Design," in *Symposium on Usable Privacy and Security* (Denver: Usenix, 2016): 1–7, https://ssrn.com/abstract=2981075.

Behavioral Economics and Nudge Units

Behavioral economists focus on how people make decisions—particularly on how they can be guided to make choices that are aligned with their own long-term interests and to follow through on them. To understand how people rationalize their choices, design spaces should work to identify people's heuristics and the bias-based shortcuts they use to make decisions.[33] Studies in this design space suggest using methods such as goal-setting, feedback loops, triggers, and rewards.[34] They also have noted people's present-biased preferences, visceral factors, and status quo biases as factors to guide the design of interventions.[35] These kinds of behavioral insights have informed interventions from nudges, to digital applications, to AI-based guides that help people save for retirement, make healthier food choices, and interact with new technologies.[36]

Decision Support Systems

Substantial research exists on decision support systems that can leverage the power of AI and systems thinking to result in improved human decision-making. Using data points and algorithms, researchers can create models that spin out scenarios and inform humans of what will follow from their possible decisions. As people interact with these tools, they join a collective intelligence that can support others' decisions.[37] Previous efforts focused primarily on visualizations as an intervention to support decision-making.[38] The modeling approach also is being combined with behavioral economics so that cognitive biases are being considered during the modeling phase so as to identify and use debiasing techniques to address them. Studies indicate that people are interested in using these tech-powered systems when the cost is low enough and people are in a highly unpredictable situation.[39]

Design Workshops to Define the Space

Building on the models and strategies proposed in the literature, the authors conducted a series of nine design workshops between 2014 and 2017 to further define a design space for building legal capacity. Each workshop addressed a particular challenge either in the justice system or in personal finance, ranging from foreign students' navigating the U.S. immigration system, to people's setting up estate plans, to defendants' facing a plea agreement, to people's getting their first mortgage. At the core of each workshop was the same essential challenge: how to help a person navigate a system that is complex and intimidating, but also that has the potential to have a major effect on their future. In each of the workshops, designers, engineers, students, and subject matter experts interviewed target users, created concept designs for new tools, and tested them with users and experts.

31 Kleimann Communication Group, "Know Before You Owe: Evolution of the Integrated TILA-RESPA Disclosures" (Rockville, MD: Kleimann Communication Group, 2012).

32 Norman Sadeh et al., "The Usable Privacy Policy Project: Combining Crowdsourcing, Machine Learning and Natural Language Processing to Semi-Automatically Answer Those Privacy Questions Users Care About," *Tech Report CMU-ISR-13-119,* no. 1 (2013), http://ra.adm.cs.cmu.edu/anon/usr0/ftp/home/anon/isr2013/CMU-ISR-13-119.pdf.

33 Daniel Kahneman, "Maps of Bounded Rationality: Psychology for Behavioral Economics," *American Economic Review* 93, no. 5 (2012): 1449–75.

34 Brian J. Fogg, "Persuasive Technology: Using Computers to Change What We Think and Do," *Ubiquity* (December 2012): 5.

35 Peggy J. Liu et al., "Using Behavioral Economics to Design More Effective Food Policies to Address Obesity," *Applied Economic Perspectives and Policy* 36, no. 1 (2014): 6–24.

36 See, respectively, Junius Gunaratne and Oded Nov, "Informing and Improving Retirement Saving Performance Using Behavioral Economics Theory-Driven User Interfaces," in *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (CHI '15) (New York: ACM, 2015): 917–20; Liu et al., "Using Behavioral Economics."

37 See, e.g., Lena Mamykina et al., "Collective Sensemaking in Online Health Forums," in *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (New York: ACM, 2015): 3217–26; and David Engel et al., "Collective Intelligence in Computer-Mediated Collaboration Emerges in Different Contexts and Cultures," in *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (New York: ACM, 2015): 3769–78.

38 Bon Adriel Aseniero et al., "STRATOS: Using Visualization to Support Decisions in Strategic Software Release Planning," in *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (New York: ACM, 2015): 1479–88; Sang-won Leigh and Pattie Maes, "AfterMath: Visualizing

Table 1 | Focus of Workshops and Emerging Patterns

Workshop Name	High-Level Use Case	Solutions and Emerging Patterns	Self-Esteem Value
Making Immigration User Friendly November 2013 22 participants	Help a foreign student navigate the immigration system	Staged guide, with a roadmap and cover sheet Smart checklist and timeline Interactive map of the process and decisions Immigration game Video stories that model how to fill in information and choose the best path	http://www.legaltechdesign.com/hands-on-law-events/making-immigration-user-friendly-report/
Law by Design, Estate-Planning January–February 2014 26 participants	Help a middle-aged professional to complete an estate plan	A cover sheet guide to the will and all official documents Social commitments—for example, a PTA-Group Sign Up, a Tupperware Wills Party, or a Get-It-Done Cruise An automated will-maker, like Turbotax Pick Your Will Story, to match your story to others' stories Roadmap of what an ideal path would be Overview of decisions and outcomes	http://legaltechdesign.com/life-plan-project/
Plea Agreement Project Spring 2014 12 participants	Help defendant facing criminal charges to navigate the criminal justice system	Scenario spinner, to try out different outcomes Staged contract, with signature on each page Social negotiation, to learn from your cohort Cover sheet guide, with shortcut overview page Red flags that mark important terms Talking points checklist for attorney and defendant to have better discussions Roadmap of the process, and what might happen down the road Orientation that provides "quick facts" Understanding meter for defendants to rate how clear or confused they are on each page Non-lawyer "grandma" to go between attorney and defendant and ensure understanding Statistical models that advise on best choice in negotiation	http://legaltechdesign.com/ThePleaAgreementProject/
Get Smart: Making Complicated Information Simple Spring 2016 35 Participants	Help consumer interested in a financial product to navigate the financial and privacy regulation systems	In-game training on important terms Staged step-by-step walkthrough of the terms Roadmap version of agreement, going through each stage like a game level Persona-based choice of how terms are communicated and what options might best suit users	http://www.legaltechdesign.com/2014/05/get-smart-legal-communication-design/
Prototyping Access to Justice in Court Self- Help Centers 3 classes, Winter 2016–Winter 2017 48 participants	Help litigant going through a family law matter (e.g., divorce or restraining order) without a lawyer	Cover sheet of complicated forms Text reminders for important dates Waiting room calming architecture, work stations, refreshments Social peer support group, forum to share Document assembly tool to complete forms on mobile phones Automated "document interpreter" to explain legalese as actionable summary Roadmap and visual booklet/passport for each step Translation duplicates, to show plain language English or other language in addition to the legal	http://www.legaltechdesign.com/prototyping-access-to-justice-designing-better-self-help-materials-for-litigants/#1
Design for Justice: Traffic Court Pop-up class series, Winter-Spring 2017 35 participants	Help defendant who has received a traffic ticket and cannot afford to pay it	Roadmap visual guides to help people see their options Automated templates to write letters and scripts to defend oneself Text-based chat coach, for guidance on logistics Dashboard with search to look up case status, details, resources, and fee reduction request Digital applications for relief Statistical prediction of the best plea to make, and likelihood of getting fee reduced	http://justiceinnovation.law.stanford.edu/courses/prototyping-access-to-justice-courses/
Know Your Rights Redesign February 2015 session 14 participants	Help teenagers understand their essential civil rights if they are faced with criminal or immigration problems	Visual flowchart and roadmap of what might happen Text-based coach to provide rights info Social group dinner to explain rights Checklists on what to know/do Celebrity models explaining rights and providing training Video enactment of situations and rights Mobile app with list of key rights Emergency hotline service	http://www.legaltechdesign.com/design-for-justice-sprints/
Expungement Design Day November 2016 28 participants	Help young people with criminal records to expunge their records under new law	Celebrity chat to help explain expungement and start expungement application Dashboard search to look up status and take action Document assembly tool to make personalized packet for person to submit	http://www.legaltechdesign.com/communication-design/kyr/#1
Guardianship Night May 2014 18 participants	Help grandmother or other relative to apply for guardianship of a child when parents are not able to care for them.	Text reminders of court deadlines System change to have courts in charge of giving all family members notice of petition Single web portal with guide and referrals Simplification of forms with plain language and reduced requirements Document assembly to fill in all forms digitally Scenario spinner, to decide which process is right	http://www.legaltechdesign.com/expunge-design-day/#1 http://www.legaltechdesign.com/guardianship-navigator/

The goal of the workshops was not to create all of the interventions that were prototyped, but rather to use the workshops as a form of design research. What were the emergent models that showed promise as interventions? What strategies and frames seemed to best engage people in system navigation? And what essential knowledge can practitioners use when developing new solutions or systems changes?

We documented the proposals that emerged, as well as the analogies and frames that participants used to describe their past experiences with systems, or their preferred future experiences. Significantly, many of the participants related their experience with the legal or financial challenge discussed in the workshop to other systems—how they have to deal with health care, insurance, consumer contracts, or other complex, bureaucratic systems. This analogical tendency reaffirmed our desire for networked design space to link our legal work to a wider design community.

Across these nine workshops—each with different cohorts of participants, different system partners, and different design briefs—participants generated similar solutions at the conceptual level. We captured their proposals and underlying user research to make sense of it for our design space. We used the recurring solutions as "candidates" for a pattern language (see Table 1).

Legal System Journey Arc

People navigating complex systems undertake a sequential flow of interactions. The systems pose not just decision-making challenges, but also journeys that include several key touchpoints. Based on our synthesis of observations made in these workshops, we constructed a core user journey that most people inside the legal system must go through. They must have the legal capability to do so to successfully resolve their issue through the system:

Phase 1: People Get to Know the System and How It Could Work for Them

1. Discovery: Become aware that a system exists to help with a problem and that the system gives them certain rights and options.
2. Engagement: Decide to explore this system and invest attention to determine whether to enter into it.
3. Orientation: Learn the basics of the system—its key terms, pathways, organizations, and common stories of users.
4. Triage: Diagnose options that are available for a specific situation and begin to consider which one best fits with their situation and values.

Consequences of Actions Through Augmented Reality," in *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (New York: ACM, 2015): 941–46; Jennifer Stoll et al., "Sesame: Informing User Security Decisions with System Visualization," in *Proceedings of the Annual ACM Conference on Human Factors in Computing Systems* (New York: ACM, 2008): 1045–54.

39 Steven C. Sutherland et al., "The Role of Environmental Predictability and Costs in Relying on Automation," in *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (New York: ACM, 2015): 2535–44.

Phase 2: Starting the Journey into the System and Deploying Knowledge Gained to Practice

5. Strategy-Making: Decide on what option to take among the available pathways and what kinds of strategies to use when trying to proceed through the system.
6. Process Navigation: Navigate the requirements of filings, appearances, document and evidence gathering, and other tasks to meet all deadlines and requirements efficiently.
7. Finding Service Providers: If needed, find human or digital services to help with advice, guidance, and support as they go through the system.

Phase 3: The Long Haul of Completing the Journey

8. Legal Task Completion: Complete work product (e.g., writing statements, filling in forms, assembling documents and evidence, preparing witnesses, and speaking to the court).
9. Sustained Engagement: Stay engaged with the system, so that even if the process is lengthy or intimidating, they continue to meet all requirements so that their work is not nullified or undermined.
10. Team Management: Coordinate all service providers, parties, and stakeholders, as well as the information and tasks, to keep the project moving forward.

Phase 4: Getting to a Resolution and Maintaining It

11. Negotiations and Difficult Conversations: Talk with the other party, the judge, or other stakeholders. Decide possible resolutions for the problem and how to trade off interests within the constraints to get to good outcomes for all.
12. Quality Check: Ensure that any work product (e.g., an agreement, plan, or decree) is of high quality, will accomplish what is intended, and can ensure a good outcome.
13. Ongoing Maintenance and Compliance: After the issue is resolved, ensure that all parties continue to do what they agreed to and deal appropriately with any new circumstances.

Behavioral Cues and Frames That Resonated

As recommended by the behavioral economics literature, we documented the heuristics, biases, and frames that seemed to influence how people tried to tackle the tasks in the system. We discovered many commonalities that could be useful in designing future interventions:

- Shortcuts: People valued a more efficient, abridged way to do something they were supposed to be doing—one that saved them time, money, or stress. They especially

valued *prefabricated templates* that they could copy or borrow from, instead of having to complete lengthy texts and forms on their own.

- Rewards: People would be more likely to continue the journey if they had a sense of being appreciated or receiving something for free—a prize or credit, or even a simple congratulations (not necessarily money)..
- Normalcy: Especially at decision-making points, people want to know the social norm, wisdom of the crowds, statistics, or other indicators of what "most people would do" in that situation.
- Sequencing and staging: For tasks that require making sense of large amounts of information, people want to see in depth only the information directly relevant to the current stage, although they still want a bird's eye view of the other stages around them.
- Stories and models: People hunger for narratives told by peers (or simulated peers) about how they dealt with the same problem, including "model stories" that explain the best things to do in an idealized story.
- Links to analogous, more familiar challenges: Many people appreciate solutions that draw on hard-won strategies they've learned in other systems—for example, strategies from dealing with dentists, car repairs, pregnancy, health insurance purchases, or buying tires. Common patterns or even naming these analogies more specifically helps in dealing with unfamiliar and intimidating systems.
- Burden shift and simplification: When the underlying system can take on more of the work (either through its workers or through automation), the burden of filling in information, making decisions, and following procedures is put on the system rather than the person. When the overall procedure can be radically simplified, so that people have less to fill in, comply with, and make sense of, they are less intimidated and navigate the system more successfully.

Testing an Initial Pattern Language with Design Experts

After conducting and synthesizing the design workshops, our team drafted a possible pattern language for designers working in complex systems. A pattern language brings together general templates that define best practices for professionals working on similar challenges and can be a key part of a design space for cross-disciplinary innovation. From the workshops and literature,

Table 1 | Focus of Workshops and Emerging Patterns

Pattern	Type of Intervention	Function
Roadmap	Visual	Give users an overview of the process. Let them visualize what the journey will be.
Future Self	Behavioral	Help users imagine their future self and protect or aspire to that future self.
Cover Sheet	Visual	Highlight in a one-page summary the key takeaways of a fuller set of underlying information.
Game mechanics	Interactive tool	Give points, feedback, and a feeling of progress for every small bit of work users do.
Limited Choice	Behavioral nudge	Give a very limited set of curated options (hiding more detailed ones).
Story-Matching	Interactive tool	Tell other people's stories (real or fictional) to let users both compare themselves and take inspiration or warning from the stories.
Staging	Visual interface + Interactive tool	Present the information in discrete steps that users go through one at a time.
Checklist	Visual interface	List tasks one by one, and give users a target for knocking them all out.
Smart Defaults	Behavioral nudge	Provide preset defaults that are the "'smart" choice for most users.
Timeline	Visual	Provide a timeline to lay out the steps in a sequence.
Dashboard	Interactive	Let users see their overall stats and specific metrics.
Strategy calculator	Interactive	Allow users to enter in data and preferences, and have the tool generate an appropriate path.
Peer to Peer	Social	Provide a forum or platform where peer-to-peer conversation can happen
Predictive choice	AI	Make the system learn from users' behavior and background to make suggestions.
Wisdom of the crowds	AI	Leverage data from the crowd and synthesize insights for making decisions.
Expert to Lay	Social	Provide a social platform where experts provide expertise and lay people share experiences and ask questions.

we identified 16 initial patterns for the phases and tasks in the system journey that we mapped that could enhance people's legal capability (see Table 2). To do so, we clustered the proposed solutions from the literature and workshop based on the functions they served and the type of intervention proposed.

After drafting the initial pattern set, we drew pattern cards with low-fidelity sketches and descriptions for each pattern. We then created a survey to evaluate whether the pattern language as a whole and individual patterns would be useful for cross-disciplinary systems capability work. We distributed our survey to design professionals who work in the domains of law, finance, health care, government, and insurance, intentionally reaching out to people from multiple domains. Our criteria for participation were that the person must have been working in one of the identified domains for one to three years, and that they were doing hands-on product design related to people navigating these complex systems. Among the 19 participants, 40% did design worked for legal contexts, 30% for health care, 25% for finance, 15% for insurance, and 10% for government services. (Some participants reported designing for multiple contexts.) The survey had four objectives:

1. To assess the designers' appetite for cross-domain work;
2. To understand their interest in a common design space;
3. To assess the 16 proposed design patterns; and
4. To gather other proposals for a design space.

High Interest in a Cross-Domain Design Space

Our survey found that most of the 19 surveyed designers are interested in a common design space. All participants identified with a similar challenge at the core of their work: "My design work centers on how to help laypeople make smart decisions while in complex situations" (5.3 on a 7-point scale, with 7 being complete agreement). They also found value in collaboration among designers working in these domains of law, health care, finance, government, and insurance. The majority of the designers were particularly interested in working with professionals in health care (74%), in law (68%), and in insurance (63%). Participants also saw some value in using general design patterns in their work, rating the value of design patterns, on average, at 4.7 points. Most participants asked to be included in future cross-domain design workshops and events, expressing an interest in learning from professionals from the other specified fields.

Rated Value of the Proposed Patterns

Participants reported on their current use of the 16 patterns as a binary choice: yes they currently use a given pattern, or no they do not. They then evaluated each pattern along a Likert scale of its potential value in their future design work (1 for minimal value, to 7 for extreme value). We combined these responses on current use and future value to categorize the patterns into one of four general pattern types: (1) currently popular and likely to be used in the future; (2) not used as much currently but are considered valuable for future use; (3) used currently but will not be in the future; and (4) not used currently and likely will not be used in the future.

Most of the patterns fell into the first two categories. Respondents gave generally high future value ratings to most of the proposed patterns, even if they did not use them currently. The patterns in category 1—high current use and high future value—were Cover Sheet, Expert-to-Lay, Staging, Dashboard, Smart Defaults, and Strategy Calculator. The patterns in category 2—moderate or limited current use and high future value—were Roadmap, Wisdom of the Crowd, Timeline, Limited Menu, Peer to Peer, Checklist, Predictive Choice, Story Matching, and Future Self. The only pattern in category 4—low current use and low future value—was Game Mechanics. No patterns fell into category 3, indicating high current use and low future value.

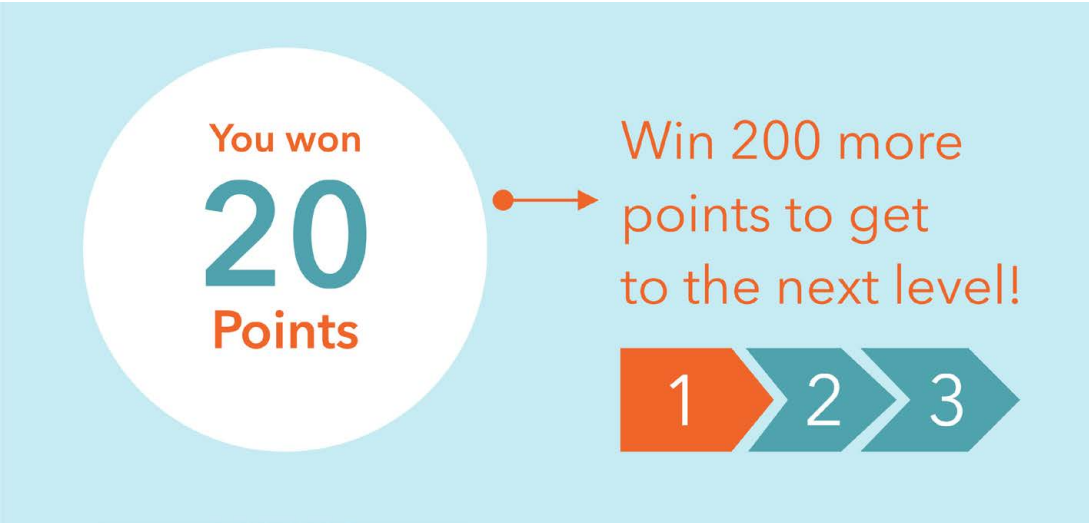
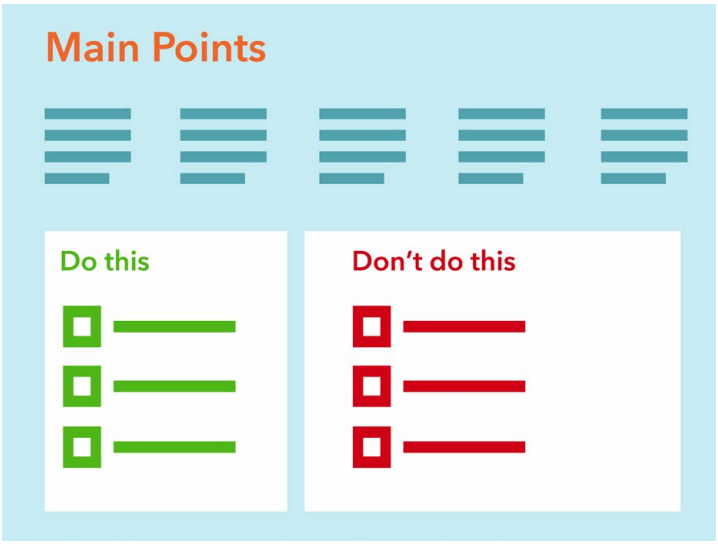


Figure 1
Game mechanics pattern. Courtesy of Margaret Hagan.

Among the patterns, two were outliers: The Game Mechanics Pattern (see Figure 1) had the lowest ranking on both future value and current use, and the Cover Sheet Pattern (see Figure 2) had the highest ranking on both metrics. The Game Mechanics Pattern was the lowest rated pattern for its value in future design work (3.2 out of 7), and the least number of designers reported currently using it (16% of respondents). Several designers ranked it low because they saw it as applicable to only certain types of tasks [e.g., goal-oriented tasks (P11), tasks where users need to be guided strongly (P1), or tasks in education (P10)]. Other respondents expressed concern that game mechanics turn off many of their users, even though a certain user archetype might be motivated by their positive feedback (P18, P15, P4). Another problem noted with the pattern was that it would make light of serious matters, such as illness (P8) or criminal legal problems (P4), and thus would turn users off.

Figure 2
Cover sheet pattern. Courtesy of Margaret Hagan.



The Cover Sheet Pattern was among the highest ranked for both current use (79% of respondents) and future value (5.9 out of 7). Designers valued it for three reasons: (1) it gives users an overview of information and then lets them choose where to dig in further, allowing customization (P2); (2) it helps users navigate complex systems by giving them a big picture before diving into details (P4); and (3) it serves users who are "lazy" or "skimmers" by helping them find key points quickly and engage with a minimum of needed information (P7).

Additional Patterns

Participants also contributed ideas for additional patterns. For example, from finance and insurance, designers proposed thermometers, wizards, and modal interfaces. A health care designer suggested including three patterns: (1) itineraries, with real-time information on a plan of events for a day, a week, or other discrete time periods; (2) team network visual, that clarifies to users who in the service team is doing what and how they are connected; and (3) collaboration platforms, which allow users to bring in their own network of family, friends, and advisors to assist in the journey through the system. Another participant expressed concern that the proposed patterns were overly focused on helping people to access information, but lacked attention on helping them to transmit information. Her work in laypeople's interaction with civic and legal systems had more interactivity involving two-way information exchanges. She suggested that the pattern library recognize this distinction and include more examples of person-to-system communication, rather than only system-to-person communication.

A Proposed Design Space for Systems Capability

The designers' responses in the survey, combined with the findings in the past design workshops and literature, led us to a proposed design space for those working to increase people's capability for navigating complex systems like the legal system. It encompasses design patterns, types of interactions, and guiding principles. This proposed design space is meant to grow based on future research, explorations, and needs identification and to become a practical knowledge base for those working to generate and evaluate new system interventions.

We propose five clusters of design patterns for system capability that can enhance people's ability to navigate a complex system:

1. Human Consults
2. Visual Interfaces
3. Interactive Tools
4. Behavioral Nudges
5. Smart Assistance

Each of these clusters emerged out of the participants' feedback to our proposed pattern cards, which suggested that the individual patterns could be formed into clusters, based on form and on how experimental they are.

The first two clusters, Human Consults and Visual Interfaces, are more traditional types of interventions to help laypeople through complex systems. Participants confirmed that they both use them now and find value in them, making them two of the highest-rated clusters in the survey. The Visual Interface patterns use visual compositions to lay out information about how to navigate a complex system. The cluster includes the Cover Sheet, Staging Information, the Checklist, the Timeline, and the Road Map. The designers appreciated these patterns' value in making information digestible and processes more approachable; they did so by dividing large processes into smaller pieces and structuring them into coherent hierarchies. This cluster does not depend on technology or data but relies on information design principles to create user-friendly versions of complicated sets of information or processes. Worth investigating in future studies is whether this preference among respondents derives from the designers' own training in information design or arises because users find these patterns highly valuable.

The Human Consult patterns also were green-lit by the survey respondents. This cluster includes the Expert-to-Lay and the Peer-to-Peer patterns, in which users are able to converse with others who are experienced with the complex system to get their advice, stories, reactions, and thoughts on the users' situation. These patterns—in particular the Expert-to-Lay pattern—are the traditional intervention in most of the complex systems (i.e., lawyers, doctors, insurance agents, and government officials give laypeople guidance on their options and what decisions to make). The respondents confirmed that they saw high future value in the Expert-to-Lay pattern's continued use, although perhaps in forms other than traditional face-to-face consultations.

The three other clusters—Interactive Tools, Behavioral Nudges, and Smart Assistance—are less traditionally used to help laypeople. Designers expressed more caution in using them but still found potential in most of the patterns represented. The Interactive Tools cluster includes the Strategy Calculator, Game Mechanics, Story-Matching, and Dashboard patterns. It is defined by an interface with which users can enter their particular case details and get feedback, specific information or advice, and other customized responses. Designers had mixed reactions, in that they green-lit all of the patterns except for the Game Mechanics, as already discussed, but they still noted potential negative

outcomes. For example, the Strategy Calculator pattern was relatively highly ranked, as being both used currently and having future value. However, in the comments, several respondents expressed concern about it—that it might overly limit users or channel them into making certain decisions before they fully understood why they were making them (P8, P10). Respondents also expressed concern that if users had to enter many preference inputs, they would experience cognitive overload, and use rates would drop (P13). The interactions in these tools potentially overwhelm users or limit their thinking, and the designers were reluctant to fully embrace them.

Patterns in the Behavioral Nudges cluster also received a mixed review of both potential value and caution about possible failures. This cluster includes the patterns of Future Self, Limited Menu, and Smart Defaults, all of which involve the designer's nudging users toward a particular choice or way of thinking through a heuristic documented in behavioral economics literature. Behavioral Nudges patterns differ from the other patterns in the amount of deliberate control designers take in shaping the understanding and choices of the user. In particular, the designers recognized value in the Limited Menu and Smart Defaults, although some were concerned that designers would exercise too much control over their users. Meanwhile, respondents expressed greater resistance to the Future Self pattern, based on past experiences in which users resisted thinking in long-term strategic ways, even in their own self-interest. System users tended to focus on immediate outcomes and service experience over strategic thinking (P17). The need for future-self empathy is high (P16), but designers doubted the power of the pattern to truly help users see themselves in the "future self" presented to them (P15, P13).

Patterns in AI-based Smart Tools were rated as having high potential but low current use. These patterns include Predictive Choice and Wisdom of the Crowd. Designers see potential in using data-driven and predictive patterns that guide people to decisions based on many data points. However, they are wary that these patterns' potential is hard to achieve, and "smart" tools that don't get it right can be annoying or even dangerous to users. Designers reported that they are investigating whether they can responsibly use Predictive Choice or Wisdom of the Crowd patterns in their work. They are hopeful that the patterns can offer accurate and rich insights, but they are cautious about whether the mechanisms supporting these patterns actually would work well enough to be usable. Thus, they would rather avoid them until the potential is proven.

Strategic Goals in This Design Space

The designers' responses to the survey revealed the principles, task typologies, user typologies, user requirements, and goals that guide their work when trying to make complex systems more navigable. These insights are valuable in understanding explicitly what their stance is toward designing for complex systems, and these insights can be incorporated into the Design Space in the following ways:

- *Reduce users' cognitive load.* This goal was one of the designers' main strategic imperatives. They value design strategies that can alleviate the sense of information overload and provide a feeling that the task is achievable. They do not want to use patterns that ask for too many inputs or require too much reading. This goal also is linked to the customization goal—that a pattern must be able to serve users who are particularly busy or quick-acting, along with those who have more time and attention to devote to the system.
- *Balance strong guidance for users with a sense of transparency and control.* This strategic goal also can be framed as balancing empowerment and simplicity. Designers expressed resistance to patterns that could channel users toward a decision before they had thought through and weighed the options themselves (e.g., the Strategy Calculator or Predictive Choices). Others also thought that their users would resist tools that did not give them at least a semblance of control over the decisions and would prefer not to use a tool that does the analysis or makes the decisions for them.
- *Create tools that are customizable to different user types.* Designers have identified different kinds of users of their system, in terms of their values and their attention span. They want users to be able to give different weight to decision factors and to consume information in multiple ways, so that multiple types of users can use the same tool effectively. Ideally, they would create experiences that allow for customized guidance, rather than universal or top-down prescriptive guidance.
- *Create tools that correctly match tone to subject matter.* Designers want to engender a tone in user's experience to ensure that users are attentive and take their decisions seriously. This tone needs to be in sync with users' own mood as they go through the system. For example, the Game Mechanics pattern was cited as a bad fit for many of the system experiences. One designer stated that it

would feel forced (P18), and another said they would not use it because it did not fit the serious subject matter of illness (P8) or criminal justice (P4).

In designers' experience, their systems are like broccoli: People generally don't want to be in them, but they often are because others have told them (or forced them) to be there. Designers speak of strategies that are about making this difficult, unwanted experience less intimidating and more understandable, but they feel they cannot rely on interactions like games, which carry playful or whimsical connotations, to alter the fundamental nature of the experience. They don't want to slip the broccoli into an ice cream sundae; they want their users to know they potentially benefit from participating and getting through the system (eating the broccoli) with the least pain possible.

Types of Interactions and the Patterns That Suit Them

The designers in our workshops identified particular contexts for which the patterns either would be appropriate or would be ill-suited, and these contexts corresponded to moments on the four-phase Journey Arc that we had identified during our workshop synthesis:

- *Discovery and Engagement.* To establish users' relationship with the system and convince them to participate in it, these patterns have value: Strategy Calculator, Cover Sheet, Dashboard, Road Map, Checklist, Future Self, and Story Matching.
- *Orientation and Triage.* To help users understand the system they are in, explore different paths they could take, and get a sense of the dynamics at work, these patterns have value: Road Map, Peer to Peer, Expert to Lay, Story Matching, and Timeline.
- *Process Navigation.* To support users' going through a sequence of steps to achieve a goal, the recommended patterns include: Checklist, Road Map, Staging, and Timeline.
- *Strategy-Making.* To help users choose among different options and deploy information pertinent to their situation, appropriate patterns are: Smart Defaults, Predictive Choice, Wisdom of the Crowd, Strategy Calculator, Limited Menu, and Expert to Lay.
- *Follow-Through.* To help users with ongoing work, and with adherence to deadlines and tasks, these patterns have value: Dashboard, Peer-to-Peer, Checklist, and Game Mechanics.

Future Agenda for Design Space Work

Our findings point to two areas for more work in this design space: (1) designs for engagement rather than control, and (2) better use of AI to support reliable smart tools. Designs for engagement would mean developing patterns that build people's interest in the domain, enhance their psychological readiness to undertake the relevant tasks, and develop their investment of time and decision-making effort into these tasks. Designers were concerned that many of the patterns currently available either oversimplify the domain so that users cannot understand it well enough or direct users to a choice before they have adequately engaged with the domain. We need to expand and test patterns that can involve laypeople in these complex systems, while still maintaining usability and lightweight interactions.

The second area for future work is developing interfaces that can combine with smarter AI and systems. As the designers pointed out, developing smart, data-driven decision-making tools for users has great potential. More investment in AI and systems is needed to provide the back-end intelligence for these front-end design patterns. Until these intelligent systems are proven to be accurate and customizable, designers will resist using them.

Conclusion

Our study confirms the value of cross-domain collaboration for designers as they create interfaces and tools to enhance people's ability to navigate systems of law, finance, government services, insurance, and healthcare. It presents an initial design space, including patterns, strategic goals, and types of interactions to guide the development of capability-enhancing interventions. This design space emerged out of a series of system design workshops that we conducted on a variety of legal and financial system challenges and then tested through a survey with designers working in these domains. This initial design space begins to construct a lingua franca among professionals working in these various domains, based on the needs our designer respondents identified.

This preliminary study lays the groundwork for future efforts in three directions: (1) evaluating these patterns and insights with user testing in specific contexts; (2) examining designers' approaches and work in more detail; and (3) moving from designing better interfaces and behaviors for systems to designing better systems themselves. This study was focused on interfaces, behaviors, and interactions that can be woven into the fabric of existing complex systems to make them more comprehensible

and navigable to lay users. However, future work must go deeper, questioning the rules, procedures, and organizations that make up the systems themselves and imagining how they could be designed to better fit with people's legal and systems capabilities. Through such questioning and imagining, we can switch the burden of the systems, which currently push complexity onto people, so that the system manages the complexity itself. Fundamental interventions in legal, health care, government, insurance, and financial systems could reduce the number of steps their processes require and streamline the complicated rules that users must obey to avoid penalties. These system redesigns, combined with better interfaces and tools, can dramatically improve people's equal, full access to these important but currently overwhelming systems.

Can Visual Design Provide Legal Transparency? The Challenges for Successful Implementation of Icons for Data Protection

Arianna Rossi, Monica Palmirani

Introduction

In 2018, a key year for data privacy and data protection in the European Union, the General Data Protection Regulation (GDPR) became applicable.[1] With it came a series of new duties and rights destined to revolutionize the ecosystem of personal data gathering and processing. The GDPR introduced a number of significant provisions that potentially produce far-reaching effects because its obligations apply to any organization offering services or goods to individuals on European soil. As a general aim, the GDPR is intended to re-establish a balance between those entities collecting and processing personal data (i.e., the data controllers) and individuals to whom that personal data belong (i.e., the data subjects), who often are unaware of the extent of the processing.

To reach this goal, the GDPR put a priority on design. The regulators assigned unprecedented relevance to the design quality of the information describing both the processing practices for personal data and the rights of the concerned data subjects. This information is commonly communicated in privacy notices. Under the GDPR, the nature, accessibility, and comprehensibility of the information describing data privacy practices must demonstrate compliance with the transparency obligations laid down in Article 12.[2] The GDPR requires that any communication addressed to data subjects must be designed in a "concise, transparent, intelligible and easily accessible form, using clear and plain language."[3]

Such attention to design—including the modality and efficacy of data privacy communication—represents a landmark in EU data protection law. It reflects decades of research documenting the absolute incapacity of traditional privacy policies to inform people's privacy-related decisions. These traditional treatments of data privacy information take the form of lengthy, overly complex, unintelligible, and hard-to-navigate documents.[4] The design of privacy communication tends to be so poor that some scholars have even categorized traditional privacy communication as dark

1 European Parliament and Council of European Union, *Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC* (General Data Protection Regulation), OJ L 119, 4.5.2016, p. 1–88, 2016. https://eur-lex.europa.eu/eli/reg/2016/679/oj.

2 See Article 29 Data Protection Working Party, *Guidelines on Transparency Under Regulation 2016/679, 17/EN WP260rev. 01* (2018). https://ec.europa.eu/newsroom/article29/document.cfm?action= display&doc_id=51025 (accessed November 12, 2019). The Article 29 Working Party was an independent advisory body with the mission of providing expert advice to the Member States and recommendations to the European Commission about the application of data protection laws through the publication of guidelines and opinions, as well as to guarantee uniform application of the law across the EU. Under the GDPR, the work of the WP29 is continued by its replacement body, the European Data Protection Board.

3 GDPR Article 12.1.

4 For an overview of the problems related to privacy disclosures, see Arianna Rossi et al., "When Design Met Law: Design Patterns for Information Transparency," *Droit de la Consommation = Consumenterecht: DCCR* [Consumers protection law] 122–23 (2019): 92–7; Florian Schaub et al., "A Design Space for Effective Privacy Notices," Symposium on Usable Privacy and Security (SOUPS), Carleton University, Ottawa, Canada, July 22–24,

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patterns—as "obscure strategies" that make it "hard or even impossible for data subjects to learn how their personal data is collected, stored, and processed."[5] The GDPR challenges this dysfunction. The previous information paradigm focused on the quantity of information as a signifier of effective disclosure.[6] Meanwhile, the quality of legal information design has been ignored. The Article 29 Working Party (WP29), in its guidelines on transparency maintains that the concept of transparency should be interpreted and applied in a user-centric manner.[7] Thus, privacy notices should not just superficially comply with the legal provision on mandated disclosure, but should be effective, informative tools. Hence, the design of legal communication must account for the specificity of the intended audience and the characteristics of human cognition to provide transparent, comprehensible, and navigable disclosures.

Remarkably, the GDPR even acknowledges the potential of visual design to enhance the comprehensibility of privacy terms. Namely, it provides for the possibility of disclosing information to data subjects with text in combination with standardized visual icons to give "in an easily visible, intelligible and clearly legible manner a meaningful overview of the intended processing."[8] Such icons must be machine-readable when presented in electronic format.[9] Although the European Commission's role is to give directions on the creation of the icons through delegated acts, the necessity of experts' involvement is emphasized in Recital 166 of the GDPR.[10] In addition, the WP29, prior to any EU standardization, encourages an "evidence-based approach" and the necessity for "extensive research in conjunction with industry and the wider public as to the efficacy of icons in this context."[11]

The research and the open problems described in the following sections aim to contribute to the emerging debate on evidence-based design standards for data protection icons in the EU. Section 2 discusses possible explanations for the use of icons in the data protection domain by listing some advantages and disadvantages. Section 3 introduces the methodological choices for the design of DaPIS, the icon set created as a means to fulfill the GDPR's requirements. Section 4 addresses some major challenges that surfaced while designing DaPIS and advances some potential answers for further research. We focus on the object of representation of the icons, their function, the methods for their evaluation, and their interpretation.

This article also contributes to the broader discussions of design's role in effective regulation and public access to rights and laws. Can visual representations of complex technical and legal information effectively help people make sense of it—and

2015; George Milne and Mary Culnan, "Strategies for Reducing Online Privacy Risks: Why Consumers Read (or Don't Read) Online Privacy Notices," *Journal of Interactive Marketing* 18, no. 3 (2004): 15–29; and Wainer Lusoli et al., "Pan-European Survey of Practices, Attitudes and Policy Preferences as Regards Personal Identity Data Management" (Publications Office of the European Union, 2012). DOI: 10.2791/81962.

5 Dark patterns are "malicious patterns that intentionally weaken or exploit the privacy of users, often by making them disclose personal data or consent against their real interest." See Christoph Bösch et al., "Tales from the Dark Side: Privacy Dark Strategies and Privacy Dark Patterns," *Proceedings on Privacy Enhancing Technologies 2016* , no. 4 (2016): 242.

6 Andreas Oehler and Stefan Wendt, "Good Consumer Information: The Information Paradigm at Its (Dead) End?" *Journal of Consumer Policy* 40, no. 2 (2017): 188.

7 WP29, *Guidelines on Transparency* , 5.

8 *GDPR* , Article 12.7.

9 *GDPR* , Article 12.7.

10 See *GDPR* , Article 12.8 and Article 92. See also *GDPR* , Recital 166, which states that "…[D]elegated acts should be adopted in respect of criteria and requirements for […] information to be presented by standardised icons and procedures for providing such icons. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level."

11 WP29, *Guidelines on Transparency* , 26.

take action to protect their own interests? Can design offer a means for effective participation in civic and consumer life? This article's discussion of the particular visualizations of GDPR communications provides some evidence of existing possibilities and constraints.

Why Icons for the Legal Domain?

Among the several possible visual means that can enhance the transparency of legal communication, the European legislators have overtly mentioned pictograms. But why is that? In this section, we suggest a few complementary explanations for this specific choice.

Visual Design for the Legal Domain

Visual communications of legal matters represent a rather novel, but increasingly growing field of study.[12] Two opposing positions have been expressed as to how legal communications might be affected by visual design. One view highlights the attested benefits of visualizations for the communication of legal matters, mostly derived from empirical evidence. For example, visualizations of legal matters can support comprehension in the following ways:

> …clarifying what written language does not manage to explain fully; making the logic and structure of the documents more visible; supporting evidence, analysis, explanation, and reasoning in complex settings; and providing an alternative access structure to the contents, especially to the non-experts working with the document.[13]

The other view states that, because the law is traditionally expressed through linguistic utterances (i.e., law is "verbocentric"[14]), visual communication poses risks. Indeed, according to this view, graphical means would not be able to transmit the nuances of legal language,[15] and they would be more open to interpretation than written statements.[16] Thus, visual communication would augment, rather than minimize, the risks of misunderstandings. In addition, it would constitute a problem in court because no established framework or vocabulary exists for interpreting and interrogating visual legal documents, unlike the well-established legal hermeneutics for verbal provisions.[17]

The cautious observations of the latter view disregard three essential aspects of the actual use of visual design. First, visual elements generally are not meant to completely replace text in legal documents.[18] Rather, illustrations, such as diagrams, timelines, icons, and comics, complement words.[19] Second, the aim is

12 See, e.g., Colette R. Brunschwig, "On Visual Law: Visual Legal Communication and Practices and their Scholarly Exploration," *Zeichen und Zauber des Rechts: Festschrift für Friedrich Lachmayer* [Signs and Magic of Law: Commemorative for Friedrich Lachmayer], ed. Erich Schweihofer et al. (Bern: Editions Weblaw, 2014): 899–933; and Volker Boehme-Nessler, *Pictorial Law: Modern Law and the Power of Pictures* (Berlin: Springer Science & Business Media, 2010).

13 See Thomas Barton et al., "Successful Contracts: Integrating Design and Technology," in *Legal Tech, Smart Contracts and Blockchain,* ed. M. Corrales et al. (Singapore: Springer, 2019): 69–72. "Visualizations seem to have a positive impact on information finding…, understanding… and recalling…." See Stefania Passera and Helena Haapio, "Transforming Contracts from Legal Rules to User-Centered Communication Tools: A Human-Information Interaction Challenge," *Communication Design Quarterly Review* 1, no. 3 (2013): 42.

14 Colette Brunschwig, "Multisensory Law and Therapeutic Jurisprudence: How Family Mediators Can Better Communicate with Their Clients," *Phoenix Law Review* 5, no. 5 (Summer 2012): 744.

15 On icons for the data protection domain, see Samson Esayas et al., "Is a Picture Worth a Thousand Terms? Visualising Contract Terms and Data Protection Requirements for Cloud Computing Users," in *International Conference on Web Engineering* (Cham, Switzerland): Springer, 2016): 42; and Christopher F. Mondschein, "Some Iconoclastic Thoughts on the Effectiveness of Simplified Notices and Icons for Informing Individuals as Proposed in Article 12 (1) and (7) GDPR," *European Data Protection Law Review* 2 (2016): 518.

16 "Visual communication is freer and less controlled than language-based communication. …[I]mages leave more room for internal development and interpretation.…Images are potentially more anarchic than words." Boehme-Nessler, *Pictorial Law,* 89.

17 On hermeneutics of visual artifacts, see, e.g., Jay A. Mitchell, "Whiteboard and Black-Letter: Visual Communication

not to have visual elements represent legal meanings as precisely as verbal expressions can do. Instead, they can clarify, give salience to, and improve memorability and navigability of information—for instance, by making visible abstract relations between concepts (e.g., sequences or conditions) that are typical of legal documents.[20] In the legal domain, then, clarifying that different kinds of visual elements convey different types of information and adopt different functions is important; some of these functions are not inherently pictorial. For example, timelines illustrate temporal sequences and comic strips can properly represent narratives, while companion icons can support strategic reading in long documents.

Users' interpretation of legal documents does not correspond to the hermeneutical activity of legal professionals. Whereas the latter is a specific methodology for the interpretation of legal provisions, the former is a regular communicative process finalized to the understanding of a (linguistic or non-linguistic) message. Although we recognize the need for extensive research on the first aspect, we focus in this article on the latter.

Icons for the Legal Domain

As simplified visual illustrations, icons cannot enhance comprehensibility of data practices as other visual elements that involve complex content (e.g., videos or comics) could do. However, they can be recognized, processed, and memorized with ease and thus can serve as cognitive support for the classification of content better than text can, as graphic user interfaces successfully demonstrate.[21] In addition, we note a widespread belief that icons can overcome linguistic and cultural barriers, which also is commonly held in the juridical domain.[22] Whereas this belief holds true for standardized conventions (e.g., the traffic signs and the graphical symbols used in public spaces) and for icons representing concrete objects, the meaning of symbols that are not semantically transparent must be learned rather than deduced.[23]

However, given the verbo-centricity of the law, icons are less disruptive non-linguistic elements than comics and other possible visual mechanisms that would completely transform legal notices.[24] Moreover, well-accepted examples of pictograms used as universal shorthand for critical legal-technical information do exist. These examples include the pictograms of Creative Commons licenses for intellectual property.[25] Other widely used and even internationally standardized symbols include traffic signs, warning signs, and labeling schemes for energy consumption.[26] Other popular pictograms symbolize notions related to cybersecurity (e.g., the padlock for secure communications and connections)

in Commercial Contracts," *University of Pennsylvania Journal of Business Law* 20 (2018): 837–43; and Naomi Mezey, "The Image Cannot Speak for Itself: Film, Summary Judgment, and Visual Literacy," *Valparaiso University Law Review* 48 (2013): 3.

18 That icons, or visual elements in general, should substitute for words completely is a common misconception in the legal sphere. See, e.g., Esayas et al., "Is a Picture," 45; and Gerlinde Berger-Walliser et al., "From Visualization to Legal Design: A Collaborative and Creative Process," *American Business Law Journal* 54, no. 2 (2017): 349.

19 Helena Haapio and Stefania Passera, "Contracts as Interfaces: Exploring Visual Representation Patterns in Contract Design," in *Legal Informatics,* ed. Daniel Katz et al. (Cambridge: Cambridge University Press, 2016).

20 Haapio and Passera, *Contracts as Interfaces,* 14 online.

21 Connie Malamed, *Visual Language for Designers: Principles for Creating Graphics That People Understand* (Beverly, MA, MD: Rockport Publishers, 2009): 119.

22 Sarah Isherwood et al., "Icon Identification in Context: The Changing Role of Icon Characteristics with User Experience," *Human Factors* 49, no. 3 (2007): 465. For a critical examination of the supposed universality of icons, see, e.g., Robert Dewar, "Design and Evaluation of Public Information Symbols," in *Visual Information for Everyday Use: Design and Research Perspectives,* ed. Harms Zwaga et al. (London: Taylor & Francis, 1999), 285–303.

23 Isherwood et al., "Icon Identification in Context," 467.

24 Margaret Hagan, "Rethinking Data Privacy Communication Design: Three Big Questions from Bologna," Legal Design and Innovation (website) (2018), https://medium.com/legal-design-and-innovation/rethinking-data-privacy-communication-design-3-big-questions-from-bologna-13275a987047 (accessed November 11, 2019).

25 https://creativecommons.org/share-your-work/licensing-considerations/ (accessed February 10, 2020).

26 For traffic signs, warning signs, and labeling schemes for energy

and to data access permissions (e.g., the geolocation symbol). In all these cases, the rationale supports the creation of a common pictographic system that can become universally recognizable when used consistently.[27]

A few initiatives for the creation of an icon language to summarize data practices exist, although they have neither gained acceptance nor reached extensive adoption.[28] Two European-led efforts are of note. The first was conducted as part of the European PrimeLife project,[29] which is the most structured attempt to create and assess icons for the data protection domain in the EU. The second presented six icons and their description in table format and was included in the 2013 Draft report on the GDPR proposal.[30] The display of such icons would have constituted a legal obligation for data controllers if the amendments had been approved. Although the icons were ultimately discarded, traces of this proposal can be found in the GDPR's call for icons.

Methodology for the Design of DaPIS

Following the GDPR's revamped interest for pictograms as transparency-enhancing means and taking stock of the lessons derived from the few previous attempts to design privacy icons, our research group drafted the DaPIS (Data Protection Icon Set), an icon set representing core concepts of EU data protection law.[31]

An Ontological Foundation

In the creation of DaPIS, we followed participatory design methods and structured it toward the goal of integration with semantic technologies. DaPIS was modeled on a specific, formal conceptualization of EU data protection law;[32] and it represents key notions grouped in categories, such as the rights of the data subjects and the purposes of data processing. The meaningful combination of these legally significant categories can support a uniform visual design scheme.

Our team deliberately created the icon set to be modular, systematic, and semantic, so that it was not just a visual design intervention, but an intelligent one. The visual signs representing fundamental concepts (e.g., right, withdraw, consent) can be combined to express complex legal meanings (e.g., the right to withdraw consent) in the same pictogram. We primarily used the root/referent icon design approach, where the root is a constant symbol representing the category, while the referent specifies the subcategory.[33] We thereby ensured visual uniformity among the icons belonging to the same class, to ease their recognition. For instance, an upward-facing hand distinguishes the icons depicting the rights of the data subjects from the other conceptual classes (see Figure 1).

consumption, respectively, see United Nations Economic Commission for Europe (UNECE), https://www.unece.org/fileadmin/DAM/trans/conventn/Conv_road_signs_2006v_EN.pdf (accessed February 10, 2020); UNECE, "Globally Harmonized System of Classification and Labelling of Chemicals," GHS Rev. May 8, 2019, https://www.unece.org/index.php?id= 51896&L=0 (accessed February 10, 2020); and European Commission (website), About the Energy Label and Ecodesign, https://ec.europa.eu/info/ energy-climate-change-environment/ standards-tools-and-labelsproducts-labelling-rules-and-requirements/ energy-label-and- ecodesign/about_en (accessed February 10, 2020).

27 For a discussion on the standardization of data protection icons, see Arianna Rossi and Gabriele Lenzini, "Making the Case for Evidence-Based Standardization of Data Privacy and Data Protection Visual Indicators," *JOAL*, Special Issue on "Visual Law," Rossana Ducato, guest ed., Vol. 8, no. 1 (2020), ISSN: 2372-7152. Open access at: https://ojs.law.cornell.edu/index.php/joal/article/view/103.

28 See, e.g., Mary Rundle, "International Personal Data Protection and Digital Identity Management Tools," Berkman Center Research Publication No. 2006–06), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=911607; Matthias Mehldau, Iconset, "Data-Privacy Declarations v0.1," https://netzpolitik.org/wp-upload/data-privacy-icons-v01.pdf (accessed February 10, 2020; Joshua Gomez et al., KnowPrivacy (website), "Privacy Coding Methodology" (2009), http://knowprivacy.org/policies_methodology.html; Renato Iannella and Adam Finden, "Privacy Awareness: Icons and Expression for Social Networks," 8th International Workshop for Technical, Economic and Legal Aspects of Business Models for Virtual Goods, incorporating the 6th International Open Digital Rights Language Workshop, September 31–October 1, 2009, Namur, Belgium, eds. Alapan Arnab and Jean-Noël Colin (Namur: Presses universitaires de Namur, 2010), 1–15; Privacy Icons (web page) https://wiki.mozilla.org/Privacy_Icons (updated June 28, 2011; "Final HCI Research Report," ed. Cornelia Graf et al., Primelife Deliverable D4.1.5 (2011),

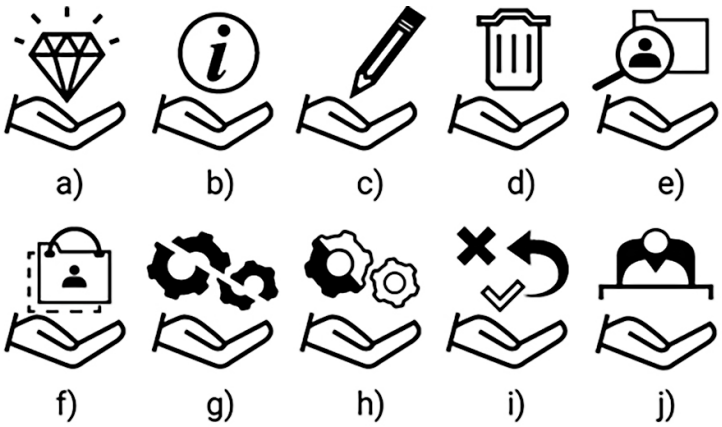

Figure 1
DaPIS pictograms representing the various rights of the data subject and showing the modularity of the icon set: a) rights of the data subject; b) right to be informed; c) right to rectification; d) right to erasure; e) right of access; f) right to data portability; g) right to object to processing; h) right to restriction to processing; i) right to withdraw consent; j) right to lodge a complaint to the supervisory authority. Figure created by the authors. The icons have been released under a Creative Commons Attributions-ShareAlike 4.0 International License.

The ontological foundation was also instrumental for the creation of a machine-readable icon set (as enshrined by GDPR Article 12.8)—that is, an icon language whose elements have computer-interpretable meanings that are explicitly and formally defined in the ontology. This capability allows for semi-automatic retrieval and display of the visualizations encoded in the ontology after the semantic expressions of the privacy policy in natural language (e.g., "you," "user") have been associated with their corresponding ontological class (e.g., "data subject") through an Extensible Markup Language (XML) mark-up.[34] The mark-up elements also allow for a structured, semantically enriched document layout that improves its information architecture: It allows for visualizing structural elements that convey information hierarchy and thereby facilitate the reading (or, more accurately, skimming) activity. Our vision was that semantically enriched privacy policies can be leveraged to generate a user-friendly visual layer composed of structured layout and icons that can ease the navigation of these documents and increase comparability across them, both for human beings and intelligent systems.

Semiotic Considerations

To create DaPIS, a communicative and semiotic consideration of design was adopted because "one of the principal functions of design is to communicate."[35] Design in this perspective is a dialogue between designer and intended user. Hence, it is not a monodirectional but a bidirectional process. Given "the existence of expressive intent and interpretative response," design is a form of mediated, asynchronous communication.[36] Like written communication, the interpretation of the message embedded in the artifact (e.g., icon, button, visualization) is carried out in a different time and place than its production. The designer tries to encode a specific meaning in an artifact (like an icon) so that final users can

http://primelife.ercim.eu/images/stories/deliverables/d4.1.5-final_hci_research_report-public.pdf; European Parliament, "Compromise amendments on Articles 1–29." COMP Article 1. 07.10.2013 (2013): 30–32, https://www.europarl.europa.eu/meetdocs/2009_2014/documents/libe/dv/comp_am_art_01-29/comp_am_art_01-29en.pdf (accessed February 12, 2020); TrustArc (blog), "TRUSTe and Disconnect Introduce Visual Icons to Help Consumers Understand Privacy Policies" (2014), https://www.trustarc.com/blog/2014/06/23/truste-disconnect-introduce-visual-icons-to-help-consumers-understand-privacy-policies/ (accessed November 11, 2019). (The icons are no longer available.); PrivacyTech (website), "Privacy Icons" (2017) https://www.privacytech.fr/privacy-icons/ (accessed February 12, 2020); and Louisa Specht-Riemenschneider and Linda Bienemann, "Informationsvermittlung durch standardisierte Bildsymbole - ein Weg aus dem Privacy Paradox?" [Communication of information through standardized symbols—a way out of the privacy paradox?] in *Datenrecht in der Digitalisierung* [Data Law in Digitalisation], ed. Louisa Specht-Riemenschneider et al. (Berlin: Erich Schmidt Verlag, 2019).

29 See, e.g., Graf, *Final HCI Research Report*.

30 See, e.g., European Parliament, *Compromise amendments*.

31 For further details about the design of DaPIS, see Arianna Rossi and Monica Palmirani, "What's in an Icon? Promises and Pitfalls of Data Protection Iconography," in *Data Protection and Privacy: Data Protection and Democracy*, ed. Dara Hallinan et al. (Oxford: Hart Publishing:

correctly decode the intended meaning (e.g., the icon's function) through their interaction with the artifact. However, users do not have direct access to the original intentions of the designer, who must therefore be able to anticipate any problematic interpretation that would lead to misunderstandings, frustration, or errors. Ultimately, the interpretation, rather than the intention, is what determines success of use of a certain design.[37]

This asynchronous interpretation matters greatly for legal design. In the design of information, graphics, interfaces, and systems, the problem of mediated communication acquires even deeper significance if the actions taken by a user based on her understanding of the artifact have legal consequences. Incorrect interpretation of interface elements, including icons, toggle bars, and buttons, might cause users to unintentionally give consent to privacy-invasive practices. Indeed, some legal scholars have voiced fears of misjudgments: Mondschein has maintained that boiling down complex legal disclosures to a set of icons would affect their quality and explanatory nature, more than correcting for information overload.[38] Misrepresentations also constitute a risk, when the visual translation of complicated processes is limited by predefined and potentially inappropriate categories or elements. The few existing user studies carried out on the interpretation of privacy icons have demonstrated that sign reception can be misguided.[39]

Therefore, as a crucial cautionary element, our team has prioritized an "evidence-based approach," with the aim of providing a rigorous assessment of the efficacy of icons as legal transparency mechanisms.[40] Because images, and especially pictograms, are polysemic, establishing whether they convey the intended message to the audience is necessary. Icon interpretation is a non-linear task and depends both on context and on the extent to which the repertoire of signs of designers and users correspond.[41] To align designers' intentions and users' interpretation, we have relied on participatory design methods in the phases of conception and creation of the icons.

Participatory Design Methods

EU regulators have not provided any indication about the modality of implementation of the GDPR's icons; meanwhile, the European Commission has deliberately let solutions arise in a bottom-up manner, from civil society and industry, before adopting a binding act that imposes EU standardization.[42] However, this approach has caused a lack of uniformity among the existing approaches, which results in weak incentives for the adoption of and investment in

2020); Arianna Rossi and Monica Palmirani, "DaPIS: An Ontology-Based Data Protection Icon Set," in *Knowledge of the Law in the Big Data Age: Frontiers in Artificial Intelligence and Applications,* eds. Ginevra Peruginelli and Sebastiano Faro, Volume 317 (Amsterdam: IOS Press, 2019), 181–95, DOI: 10.3233/FAIA190020; Arianna Rossi, "Legal Design for the General Data Protection Regulation: A Methodology for the Visualization and Communication of Legal Concepts" (PhD thesis, Alma Mater Studiorum Università di Bologna; PhD in Law, Science and Technology 2019): Chapter 6.

32 For a thorough description of the data protection ontology PrOnto and its goals, see Monica Palmirani et al., "PrOnto: Privacy Ontology for Legal Reasoning," in *International Conference on Electronic Government and the Information Systems Perspective,* eds. Andreas Kő and Enrico Francesconi, Lecture Notes in Computer Science, vol. 11032 (Cham, Germany: Springer, 2018): 139–52. DOI: 10.1007/978-3-319-98349-3_11.

33 Lisa Fontaine et al., "Signs That Work, Phase 2: Symbol Design Research Report," (2010): 8; http://www.healthdesignnetwork.net/s/2-UHCS-Research-Report.pdf (accessed February 12, 2020).

34 Akoma Ntoso (http://www.akomantoso.org) is a legal open XML standard for legislative, judiciary, and legal documents. See Monica Palmirani and Fabio Vitali, "Akoma-Ntoso for Legal Documents," in *Legislative XML for the Semantic Web,* ed. Giovanni Sartor et al. (Dordrecht: Springer, 2011): 75–100.

35 Woodrow Hartzog, *Privacy's Blueprint: The Battle to Control the Design of New Technologies* (Cambridge, MA: Harvard University Press, 2018): 27. For a general review of communicative and semiotic considerations of design, see Clarisse Sieckenius de Souza, *The Semiotic Engineering of Human-Computer Interaction* (Cambridge, MA: MIT Press, 2005).

36 Nathan Crilly et al., "Design as Communication: Exploring the Validity and Utility of Relating Intention to Interpretation," *Design Studies* 29, no. 5 (2008): 425–27.

37 Crilly et al., "Design as Communication," 442.

38 Mondschein, "Iconoclastic Thoughts," 515.

privacy indicators, and in a proliferation of differing icon sets. This inconsistent visual design hinders users' abilities to easily recognize icons and rely on them for guidance on the law and their rights.[43]

We designed DaPIS using participatory design methods with two purposes in mind: to allow for the expression of multifaceted values and priorities of the different stakeholders who might be affected by the icon set and to avoid overlooking any fundamental aspect of legal icon design.[44] We held a series of workshops involving various stakeholders (i.e., a heterogeneous group of graphic designers, lawyers and legal scholars, computer scientists, communications professionals, interested laypeople, and representatives of the business world), with the intention of combining their different visions.[45] The preparatory, conceptual work for the design of the graphical symbols involved mind-mapping techniques to gather a wide choice of motifs for each preselected legal notion.

For instance, graphic professionals proposed the root/referent icon design approach and sought to ensure the quality and overall coherence of the visual design. They provided plausible contexts of use for the icons. Meanwhile, legal experts and computer scientists guided the interpretation of the abstract legal-technical definitions described in the GDPR. Moreover, individuals from for-profit business enterprises offered a critical voice on the expected hurdles to the implementation of the icons in the market. Laypeople offered a non-specialized view that supported the development of universally understandable symbols, as opposed to graphical conventions known only to professionals.[46]

Involving multiple stakeholders also underlined crucial differences among their views and priorities. One of the most evident divergences concerned expectations about the visual representations of legal notions: Whereas legal scholars defended the importance of a literal and detailed "visual translation" of the concepts to avoid their misrepresentation and oversimplification, designers emphasized the crucial relevance of criteria like simplicity and legibility of the icons to support ease of recognition and the ability to render them on a variety of devices and screen sizes. Collaborative prototyping enabled the different stakeholders to negotiate their views in a shared design space and to reach a satisfactory mediation.[47] The final DaPIS comprises 37 elements.[48]

Open Questions and Problems

During the development of the research, a series of open questions emerged, and we propose these questions as a guide for future work in visual design for legal transparency.

39 See, e.g., Leif-Erik Holtz et al., "Towards Displaying Privacy Information with Icons," in *IFIP PrimeLife International Summer School on Privacy and Identity Management for Life,* ed. Simone Fischer-Hübner et el. (Berlin, Heidelberg): Springer, 2010): 338–48; John Sören Pettersson, "A Brief Evaluation of Icons in the First Reading of the European Parliament on COM (2012) 0011," in *IFIP International Summer School on Privacy and Identity Management* (Springer, 2014): 125–35; and Iannella et al., "Privacy Awareness," 1–15.

40 WP29, *Guidelines on Transparency,* 26.

41 Ryan Abdullah and Roger Hübner, *Pictograms, Icons & Signs: A Guide to Information Graphics* (New York: WW Norton, 2006), 14.

42 Directorate General Justice and Consumers, European Commission, private communication reported in Serge Tagne, *Transparence dans le RGPD. Les icônes tiendront-elles la promesse?* [Transparency in the GDPR. Will the icons keep the promise?], thesis, ISEP (2018): annex 1.

43 Joel Reidenberg et al., "Trustworthy Privacy Indicators: Grades, Labels, Certifications, and Dashboards," *Washington University Law Review* 96 (2019): 1409.

44 See, e.g., Maja van der Velden and Christina Moertberg, "Participatory Design and Design for Values," in Maja van den Hoven et al., *Handbook of Ethics, Values and Technological Design* (Dordrecht: Springer, 2015): 41–66. See also Arianna Rossi and Helena Haapio, "Proactive Legal Design: Embedding Values in the Design of Legal Artefacts," in *Internet of Things: Proceedings of the 22nd International Legal Informatics Symposium IRIS 2019,* ed. Eric Schweighofer et al. (Vienna: Editions Weblaw, 2019): 537–44.

45 The first workshop was held in July 2017 at the Legal Design Lab of Stanford Law School, Stanford, CA. Subsequent workshops were organized over the course of 2018 at the CIRSFID (Interdepartmental Centre for Research in the History, Philosophy, and Sociology of Law and in Computer Science and Law) of the University of Bologna (Italy) in collaboration with the Academy of Fine Arts of Bologna and the Associazione Italiana Informatica Giuridica.

46 For instance, for computer scientists the prototypical representation of data is a

The Challenge of the Object of Representation

One fundamental question concerns the objects that the visual language should represent. Previous design efforts fall into three approaches to object representation. The first focuses on single objects and concepts that are proper to the privacy and data protection domain (e.g., the concept of "pseudonymization" or that of "encryption").[49] The second tries to visually represent statements about such concepts, referring to the presence of a certain data practice (e.g., "Site contains third-party ads"[50]). The third approach includes attempts to give an indication of the lawfulness of specific data practices (e.g., "No personal data are collected beyond the minimum necessary for each specific purpose of the processing"[51]). The aim here is to rate such practices to provide meaningful advice and to inform users' decisions on whether to use a certain service—or to head elsewhere. Similarly, other approaches put an emphasis on risky data processing aspects.[52]

This problem and question introduces an additional critique about the icons' fit to represent knowledge in law.[53] Icons are generally best fit to depict concrete concepts, such as objects and people. Abstract data protection notions (e.g., "processing purposes") are inherently difficult to visualize and to decode. Individuals must resort to contextual elements, previous experience, and learned knowledge to correctly interpret them. For this reason, supplementing icons with textual labels or other interface design elements can explain their meaning and therefore facilitate their interpretation.[54] Such elements are necessary at first exposures in cases where the relationship between the graphical symbol and its meaning is arbitrary and cannot be inferred. Therefore, expectations of what icons can do, when based on the ways icons have been used to symbolize concrete concepts, are inappropriate in this case, and the expectations are what must be reviewed. It is only by providing enough interpretative context, preferring concrete concepts over abstract ones and actively supporting the learning of the association between pictogram and meaning that icons can aspire to communicate universally and univocally. However, icons represent only one of the possible solutions to the endemic lack of transparency in privacy notices.[55]

Another critique of the use of icons to clarify legal concepts moves from the fact that these graphical symbols are not suitable to communicate the nuanced notions expressed in legal terms. The legal experts that took part in DaPIS's participatory workshops expected to accurately translate the legal definitions into their visual equivalents by preserving the sheer amount of details and the complexity that characterize legal provisions. The

cylinder, while for laypeople, the file folder is a more recognizable symbol. See Arianna Rossi and Monica Palmirani, "From Words to Images Through Legal Visualizations," in *AI Approaches to the Complexity of Legal Systems,* ed. Ugo Pagallo et al. (Cham: Springer): 80.

47 Van der Velden and Moertberg, *Participatory Design,* 59.

48 DaPIS is available for download at http://gdprbydesign.cirsfid.unibo.it/dapis-2/ (accessed November 11, 2019) and is licensed under a Creative Commons Attributions-ShareAlike 4.0 International License.

49 As in the cases of Mehldau, Iconset; Iannella et al., *Privacy Awareness;* Holtz et al., *Towards Displaying;* PrivacyTech, *Privacy Icons;* Specht-Riemenschneider and Bienemann, *Bildsymbole* [Pictograms].

50 As in the case of Moskowitz and Raskin, *Privacy Icons.*

51 As in the cases of Rundle, "International Personal Data Protection"; European Parliament, "Compromise Amendments (LIBE) Committee, Draft Report.

52 Zohar Efroni et al., "Privacy Icons: A Risk-Based Approach to Visualisation of Data Processing," *European Data Protection Law Review* 5, no. 3 (2019): 352–66; and Max von Grafenstein et al., "Designing Privacy Icons & Testing for its Effectiveness by an Interdisciplinary Research Methodology" (2019), https://privacyiconsforum.eu/projects/designing-privacy-icons-and-testing-for-its-effectiveness/ (accessed January 22, 2020).

53 The issue of the icons' object of representation has been more extensively explored in Rossi and Palmirani, "What's in an Icon?": 69–70.

54 See, e.g., Susan Wiedenbeck, "The Use of Icons and Labels in an End User Application Program: An Empirical Study of Learning and Retention," *Behaviour & Information Technology* 18, no. 2 (1999): 68–82.

55 For a collection of transparency-enhancing design patterns (including but not limited to icons) for privacy notices, see Rossi et al., "When Design Met Law," 99–120.

underlying hypothesis predicted that the addition of more traits and symbols to a pictogram would improve icon comprehension. In addition, the jurists firmly supported a literal translation of the concepts into the pictograms to decrease the set of plausible interpretations to one univocal meaning. Informed by this position, the initial prototypes of DaPIS resulted in complex and detailed pictograms. However, our user studies revealed that literal, precise representations appeared confusing and overwhelming to the users, instead of representing meaningful guidance.

Remarkably, even the opposite problem was encountered: Some concepts lack a precise definition, not only because natural language is ambiguous in itself, but also because legal and, in particular, privacy terms are deliberately left vague to be open to interpretation.[56] For instance, data processing can be necessary to provide a certain service (e.g., a maps app needs the user's geolocation data to guide her to the desired destination). Thus, legal expressions, such as "we use the data we collect to provide you with the information and services that you requested from us," constantly figure among the processing purposes of a service provider but is not further specified. Visualizing such a vague "purpose of provision of the service" has thus represented a challenge. An emblematic and extreme case also is represented by the concept of "third party," which is a fundamental concept in data protection regulation and is legally defined by what it is not, instead of by what it is.[57] For these reasons, similar abstract and loose legal notions were difficult to translate into easily interpretable visuals.

The Challenge of Defining Icon Functions[58]

The diversity concerning the icons' object of representation, as described, also is reflected in the different functions that an icon set can assume related to transparency in privacy disclosures.[59] Graphical symbols depicting individual notions can accompany headings or key points of the notice to saliently indicate where specific information can be found. These "companion icons" are meant to break the wall of text and thereby to attract readers' attention and help them to skim through the document to efficiently identify specific information.[60] Evidence shows that they can increase readers' comprehension of privacy policies.[61] This design pattern can be particularly advantageous in lengthy documents that are devoid of an information hierarchy.

Symbols that try to unequivocally communicate to users what privacy practices are stated or are absent from a privacy policy add a layer of meaning to companion icons. For instance, visual

56 Jaspreet Bhatia et al., "A Theory of Vagueness and Privacy Risk Perception" (24th International Requirements Engineering Conference (RE), Beijing, 2016), *IEEE Xplore,* 26, DOI: 10.1109/RE.2016.20.

57 "'Third party' refers to a natural or legal person, public authority, agency or body other than the data subject, controller, processor and persons who, under the direct authority of the controller or processor, are authorized to process personal data," GDPR Article 4.10.

58 The topic of the icons' function has been more thoroughly discussed in Rossi and Palmirani, "What's in an Icon?": 72–75 and in Arianna Rossi and Gabriele Lenzini, "Which Properties has an Icon? A Critical Discussion on Evaluation Methods for Standardised Data Protection Iconography," in *Proceedings of STAST* (Berlin, Heidelberg: Springer, forthcoming), Section 5.

59 See Abdullah and Hübner, *Pictograms,* 17, 30.

60 See the companion icon pattern in Haapio and Passera, "Contracts as Interfaces," 26; see also related examples in Rossi et al., "When Design Met Law," 105, 108–109.

61 Behavioural Insights Team, *Best Practice Guide: Improving Consumer Understanding of Contractual Terms and Privacy Policies: Evidence-based Actions for Businesses* (London: Behavioural Insights, 2019), 11–12, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/831400/improving-consumer-understanding-contractual-terms-privacy-policies.pdf. The work was commissioned by the Department of Business, Energy and Industrial Strategy of the United Kingdom.

symbols can signal that profiling of the data subject occurs or that personal data are anonymized. Whether this practice respects the user's privacy preferences or not is left to the user to discern.

A system of icons also can attract users' attention to specific data practices that can be considered risky (e.g., automated decision-making that has significant legal implications for the data subject[62]) or unlawful (e.g., processing a larger amount of data than necessary, thus contradicting the principle of data minimization[63]). In this view, icons assume the role of warning signs, like those indicating explosive or poisonous materials, those signaling the security or insecurity of an internet connection, or those communicating a potential risk to the driver. Conversely, visual elements that act as "quality seals" and highlight good practices (e.g., "Processing of data within Europe or a third country with a sufficient level of data protection"[64]) also can be very informative for users' decisions about their privacy.

Given the ontology of concepts used as a methodological framework to create the icons, DaPIS depicts individual concepts that cover the different ontological classes. This choice allows practitioners and researchers to devise and explore automated or semi-automated concept-mining techniques that recognize where a certain subject is described in a text and that display the corresponding icons, serving the function of information-markers. However, this approach is feasible only in standardized, well-structured privacy policies, where each thematic section covers one topic. Moreover, the adoption of companion elements reflects a deliberate, cautious position about the interpretability of icons. Instead of trying to completely replace the legal text, the aim is to attract the data subject's attention and to aid in the navigation of long legal documents, thus supporting the reader's interpretation through a combination of textual and pictorial cues.

Another fundamental reason to adopt icons representing individual concepts is that providing any kind of decontextualized judgment about the lawfulness or riskiness of a legal practice might be problematic.[65] Sentence-level icons arguably could be more informative and thus more helpful for data subjects' privacy-related decisions, but they also would entail an interpretation about the goodness of such practices and thus would interfere with the autonomy and self-determination of individuals. Moreover, indicating the riskiness of a certain practice *per se* and *a priori* can be a questionable choice, given that context is key to determine the level of risk. For example, profiling might be problematic if used for price discrimination, but it might be considered useful and even desirable if aimed at providing targeted special offers. Moreover, research has demonstrated that privacy preferences vary greatly[66]; what is considered invasive by one person might be considered acceptable by another.

62 "The data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her," GDPR Article 22.

63 "Personal data shall be: ...adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed (data minimisation)," GDPR Article 5(1)(c).

64 See Privacy Icons, "Disconnect." See Specht-Riemenschneider and Bienemann, "Informationsvermittlung."

65 See Rossi and Palmirani, "What's in an Icon?": 72–73.

66 Pedro Giovanni Leon et al., "Privacy and Behavioural Advertising: Towards Meeting Users' Preferences," (Symposium on Usable Privacy and Security (SOUPS), Carleton University, Ottawa, Canada, July 22–24, 2015).

In addition, even the adoption of such icons by data controllers might be troublesome. The GDPR states that the data controller decides whether to use icons in combination with written information to comply with the transparency obligation. Expecting that a service provider would deliberately warn its users about practices that they would find unfavorable is unreasonable.[67] However, third-party services that provide visual indicators for the data protection practices of data controllers offer an alternative solution. For instance, Terms of Service; Didn't Read (ToS;DR) uses crowdsourcing to analyze privacy policies and so to provide the visual ratings[68]; meanwhile, Polisis uses deep learning.[69] Both third-party solutions can be contested because they reflect mediated interpretations (by non-expert humans and by artificial intelligence that was trained on manually annotated data, respectively) and might therefore be subject to error. However, some scholars maintain that this approach represents a viable manner to implement an actual "informed consent" and are starting to investigate this research direction.[70]

For all these reasons, a multi-stakeholder discussion with policy-makers, the public, and regulated organizations is advisable. The European Commission, service providers, citizens, consumer associations, practitioners, and researchers and scholars from disciplines including design, philosophy of law, psychology, behavioral economics, and neuroscience should be involved in determining the function that GDPR icons should have, according to the function they intend to serve and goal they intend to achieve.

The Challenge of Icon Evaluation[71]

Icons do not necessarily foster comprehension of the concepts they represent, although many assume they do. Ease of an icon's interpretation depends on well-defined characteristics, such as semantic distance (also defined as level of arbitrariness). Concrete icons are easily recognizable even at users' first exposures; meanwhile, the meaning of arbitrary icons has to be learned rather than inferred.[72] In the latter case, immediate comprehension is impossible to reach: Rather, as familiarity increases with repeated exposures, recognition rates do as well. In addition, familiarity has a dual nature[73]: It involves both previous knowledge of the concept (e.g., the concept of "geolocalization") and previous experience with its visual representation (e.g., the omnipresent pin icon). Furthermore, because individual characteristics, such as cultural background, age, and domain expertise, affect how knowledgeable users are in the legal and technical area, they also can influence ease of icon interpretation.

Such factors challenge standard international methods of icon evaluation, which are appropriate only if the concept represented in the icon is known to the interpreters.[74] The ISO standard

67 Reidenberg et al., "Trustworthy Privacy Indicators," 16.

68 See TOS;DR, Classification, https://tosdr.org/classification.html (accessed January 24, 2019).

69 Hamza Harkous et al., "Polisis: Automated Analysis and Presentation of Privacy Policies Using Deep Learning," *arXiv:1802.02561v2* (2018).

70 See, e.g., Efroni et al., "Privacy Icons: A Risk-Based Approach"; and von Grafenstein et al., "Designing Privacy Icons."

71 For a discussion on icon evaluation methods and measures, see Rossi and Lenzini, "Which Properties has an Icon?" See also Siné J.P. McDougall et al., "Measuring Symbol and Icon Characteristics: Norms for Concreteness, Complexity, Meaningfulness, Familiarity, and Semantic Distance for 239 Symbols," *Behavior Research Methods, Instruments, & Computers* 31, no. 3 (1999): 487–519.

72 See Malamed, *Visual Language for Designers*, 118; and Jon Hicks, *The Icon Handbook* (Cardiff: Five Simple Steps, 2011), 22.

73 Isherwood, *Icon Identification in Context*, 467.

74 See, e.g., European Telecommunications Standards Institute, *Human Factors (HF); Framework for the Development, Evaluation and Selection of Graphical Symbols. EG 201 379 V1.1.1 (1998-12);* and ISO, *ISO 9186-1:2014.* Graphical symbols–Test methods–Part 1: Method for testing comprehensibility, https://www.iso.org/standard/59226.html (accessed February 12, 2020).

for testing symbols whose referents are unknown also presents some limitations, as we have maintained elsewhere.[75] Such evaluation does not measure the learnability of an icon system in context and is exclusively based on quantitative methodologies. Longitudinal studies using a mixed methods approach would probably be more informative about the effectiveness of icons and more methodologically sound.[76]

Providing contextual cues that mirror the actual use situation of the icons is crucial to ease the interpretation process during icon assessment by users. Without taking into consideration familiarity and without providing the intended context of use, low recognition scores would mistakenly indicate that re-design and further testing are necessary.[77] Indeed, the few existing studies on the efficacy of data protection icons have overlooked such dimensions; as a result, most of the visual elements have been discarded, based on the low recognition rates of icons that represent unfamiliar concepts or that are displayed without sufficient context.[78]

Appropriate evaluation techniques should be used to determine whether icons are effective in other roles in legal contexts. If icons are to be used as navigation cues in privacy policies, then the need is to evaluate whether users can find specific pieces of information in these documents (i.e., effectiveness); whether they can do so more easily, or more quickly (i.e., efficiency); and whether they give a better user experience (i.e., more satisfaction and less frustration) than in text-only documents. If icons should unambiguously indicate the presence or absence of a certain data practice, then there should be evaluation as to whether users comprehend these dualities. If icons should warn users against risky or unfair data processing, the evaluation focuses on their noticeability and their influence on users' decision-making process (e.g., the choice of a certain service over another).

Our team has evaluated the DaPIS icons' legibility and comprehensibility. Legibility assessment concerns the ease of recognition of the single elements that compose the icons and influences the ease of recognition of the icon as a whole. We established two evaluation criteria for this comprehensibility assessment: first, a subjective estimation of the fit for correspondence between visual representation and underlying concept; and second, whether the interpreter was able to speculate about the underlying motivations for a certain icon choice, even if its meaning was not immediately comprehensible at the first exposure.

The overall results indicate that the icons with higher levels of concreteness and familiarity are more easily recognizable, while those that try to represent abstract or unfamiliar notions were difficult to understand. The results provide a first, elementary indication of which visual elements are more recognizable and which

75 See Rossi, *Legal Design for the General Data Protection Regulation,* 271–73; and Rossi and Lenzini, "Which Properties Has an Icon," 15. See also ISO, *ISO 9186-3:2014. Graphical symbols - Test methods Part 3: Method for testing symbol referent association,* https://www.iso.org/standard/59882.html (accessed February 12, 2020).

76 On the issue of usability evaluation methods, see, e.g., Saul Greenberg and Bill Buxton, "Usability Evaluation Considered Harmful (Some of the Time)," CHI '08: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (New York: ACM, 2008), 111–120, https://doi.org/10.1145/1357054.1357074.

77 See Jennifer Snow Wolff and Michael S. Wogalter, "Comprehension of Pictorial Symbols: Effects of Context and Test Method," *Human Factors* 40, no. 2 (1998): 173–86.

78 For a critical examination of user studies about the comprehensibility of privacy icons, see, e.g., Rossi and Lenzini, "Which Properties Has an Icon," 4.

concepts are more widely known.[79] In addition, more rigorous assessments of DaPIS must be carried out, including on dimensions such as visibility, ease of learning, culture-independence, and discriminability.[80] In particular, DaPIS needs to be evaluated according to its function as information markers in a privacy policy. Investigating whether icons can compose the first layer of a layered approach, providing in an "easily visible, intelligible, and clearly legible manner a meaningful overview of the intended processing" and of consent requests, also is necessary.[81]

Further research also should be devoted to the design of information and privacy indicators on small screens, such as tablets and smartphones, but also internet of things (IoT) devices without screens and in surveillance environments.

The Challenge of Universal Interpretation

For the reasons already explained, expectations that icons can be uniformly and immediately understood by any user must be approached with due precautions.[82] Nevertheless, widespread recognition can be facilitated by supporting initiatives toward international visual standardization and toward the education of data subjects.

Educational measures could be included in the development of the fundamental digital skills envisioned by the European Digital Framework for Citizens (DigComp).[83] Already included are skills related to privacy, security, and data protection. The long-term goal is to raise awareness and develop a shared culture on such topics. In the specific context of icon research, such a step arguably would be beneficial to augment familiarity and recognition rates. However, expecting icons to increase people's understanding of data protection issues and to solve the critical transparency problems that privacy-related communication classically poses is simply wrong. In this respect, many other design-based interventions can be developed and experimented with.[84]

International standardization is also a necessary step and has a twofold objective. First, it seeks to limit the proliferation of concurrent icon sets that, after a constructive initial phase of divergent creation, becomes an obstacle to widespread recognition and implementation.[85] Second, it seeks to increase familiarity with the visual language and the underlying concepts and hence to increase the ease of recognition. Research efforts to create and evaluate a reliable icon system are increasing internationally[86]; but deciding on one icon set should eventually be the goal, leading to widespread and uniform use, supported by influential actors, such as major companies of the digital economies. Moreover, only the European Commission's adoption of delegated acts can establish the object of representation, the function of icons, and the elements

79 Three research studies were carried out on subsequent, revised versions of DaPIS, but with a small pool of mostly young and well-educated users. For a detailed illustration, see Rossi and Palmirani, "What's in an Icon?": 77–80; and Rossi, *Legal Design for the General Data* Protection Regulation, Chapter 6.

80 Rossi and Lenzini, "Which Properties Has an Icon," 11–3.

81 GDPR Article 12.7.

82 In the WP29 guidelines, for example, they should be "universally used and recognized across the EU as shorthand for information." WP29, *Guidelines on Transparency,* 26.

83 Yves Punie et al., *DigComp into Action: Get Inspired, Make It Happen. A User Guide to the European Digital Competence Framework* (Brussels: Publications Office of the European Union, 2018): 7. 10.2760/112945.

84 See Rossi et al., "When Design Met Law."

85 Reidenberg et al., "Trustworthy Privacy Indicators," 15–6.

86 See the initiatives listed at https://www.privacyiconsforum.eu/ (accessed November 12, 2019).

of the icon set—possibly with the prior involvement of experts, the consideration of the outcomes of empirically based international studies, and provision of the necessary infrastructure for those international studies.

Conclusions and Future Work

Can visual design effectively communicate relevant privacy and data protection aspects to members of the public? Can this communication improve data subjects' decision-making about data privacy and the use of their legal rights under the GDPR? This piece provides an overview of the main research challenges posed by the development and evaluation of a data protection icon set, enshrined by the GDPR as a transparency-enhancing mechanism. However, much research lies ahead. The adoption of delegated acts is urged by EU Member States[87]; however, the European Commission should not hurriedly choose one code of icons without appropriate evidence supporting its efficacy for the stated purposes. Instead, the EU Commission should welcome, scrutinize, and even include in its decision-making the outcomes of initiatives that have been supported by a powerful methodology, that present trustworthy and generalizable results, and that involve stakeholders representing various sectors of society, including industrial partners whose endorsement, acceptance, and application of a specific icon set across and beyond the EU borders is crucial. Furthermore, more concerted efforts should be dedicated to the design of a holistic methodology that combines several evaluation indexes (e.g., comprehensibility, learnability, and culture independence).[88] Without such endeavors, haphazard adoption of one set of icons presents significant risks, including reversal of the GDPR's praiseworthy efforts to enhance transparency and to rebalance digital asymmetries between data subjects and data-gathering organizations.

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87 Memo from the General Secretariat of the Council, subj: Preparation of the Council position on the evaluation and review of the General Data Protection Regulation (GDPR)-Comments from Member States 12756/1/19REV 1 (Brussels: Council of the European Union, October 9, 2019): 15, https://data.consilium.europa.eu/doc/document/ST-12756-2019-REV-1/en/pdf (accessed on 12 November 2019).

88 See Rossi and Lenzini, "Which Properties Has an Icon."

Works of War: Seymour Chwast

Binghamton University Art Museum, Binghamton University, Binghamton, New York (March 28–May 18, 2019)
Curated by Blazo Kovacevic, exhibit and catalog designed by Blazo Kovacevic (Exhibition Review)

Steven Brower

"Most wars are stupid and don't deserve the loss of a single human being. All I can do about it is to express my concern in work."

Seymour Chwast

In spring 2017, Binghamton University hosted "Milton Glaser: Modulated Patterns," an exhibit of the design master's then-recent work. The exhibit, curated and designed by university professor Blazo Kovacevic, featured wall-to-ceiling reproductions alongside original works, submersing the viewer in the visual environment. Two years later, the curators have followed with "Works of War: Seymour Chwast"—a second in their Masters series. Chwast was a co-founder of Push Pin Studios in 1954 in New York City, along with Glaser, Ed Sorel, and Reynold Ruffins. The group set the tone for the 1960s with their "Push Pin Style" of psychedelic-tinged, brightly colored, Art Nouvea–inspired illustrations for advertisements and major publications. Through their liberal use of historical reference, Push Pin helped set post-modernism in motion, and their affect influences our visual language to this day.

Chwast has remained at the forefront of graphic design for more than 60 years. His work appearing regularly in books, magazines, products, and posters. Born in 1931 in New York City, during the Great Depression, Chwast came of age during World War 2. One of his passions, his pacifism, is evident from his earliest contributions, including in works on show in this significant exhibition. In 1957 he produced his "A Book of Battles," featuring clashes from the Battle of Marathon in 490 BCE through World War 1. The work was the first in a line of tomes dedicated to the subject of the insanity of war throughout history. During the Vietnam War, two of his posters—"End Bad Breath" and "War is Good Business (Invest Your Son)"—set the tone for the anti-war movement. When a young Bob Dylan and Joan Baez were photographed in front of it, the latter's messaging was further reinforced, producing an iconic counter-culture image. Chwast continued to create peace

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posters through the subsequent decades. Another example of his commitment to pacifism, included in this timely selection, is the multi-authored 1994 book, *Art Against War: 400 Years of Protest in Art,* by D.J.R. Bruckner, Steven Heller, and Chwast. In 2017 Chwast authored yet another book, *At War with War,* comprising stark woodcuts depicting the horrors of battles through the centuries. One would think that might be his last word on the subject. It is not.

"Works of War: Seymour Chwast" features many large paintings and other works of art created in 2018, as well as earlier works—44 in all. Curated by Kovacevic, Associate Professor of Art and Design, the exhibit surrounds the viewer through the sheer volume and scale of the works. The experience is similar to the Glaser exhibit: total submersion in the work. Here, Chwast's anti-war message is loud and clear.

In some cases, Chwast's decorative approach confronts any preconceptions of what war looks like. In many ways, it renders the subject mundane: War is so commonplace that patterns of soldiers, bombs, and planes could easily replace Charlie Harper's birds and trees in our visual lexicon.[1] And perhaps this usurpation is the point. These works stand in contrast to the smaller black and white woodcuts, and the pen and ink and marker works, whose grittiness and hard-hitting subject matter of skulls, gas masks, soldiers in gear, and parachutes hit the message home in a more direct manner. Included is a single painted tin sculpture, "The General," created in 2018; the general is isolated behind an exaggerated podium, no doubt delivering his latest message of conflict.

Often the medium is the message. As Kovacevic notes in the catalog, "pencil, charcoal, ink, marker, brush, chisel, paper, canvas, wood, and metal are brought to bear (sic) like weapons in a personal arsenal." The installation reinforces the impact of the work throughout. Presented on two floors of the main gallery, you can head up the stairs and you are confronted by an armed soldier ready to block your entry (see Figure 1). Turn a corner to discovery a cacophony of bombs and planes. Behind a wall lurks more death and destruction, yet presented in a way you cannot be drawn into. "The Official Guide to Chemical Warfare" renders the information at once horrific and routine. In the end, there is no escaping what has been a constant since the beginnings of recorded history.

One of the most evocative images, "African Conflict," woodcut, 2015 depicts a soldier standing behind a wall of skulls. It is reminstant viscerally to Goya's later black paintings period and thematically to Frank Frazetta's iconic "Conan the Barbarian" painting. It stands in contrast to the disarmingly cheerfully colored "Invasion" series of three large map paintings. Upon closer

1 See https://www.charleyharperprints.com/ (accessed October 7, 2019); and https://www.charleyharperprints.com/charley-harper-art/?gclid=EAIaIQobChMIpvHq57iF5QIVCK_ICh1u_wGxEAAYASAAEglyZvD_BwE (accessed October 7, 2019).

Figure 1
Art Museum Seymour Chwast Instillation. Binghamton University Art Museum, Binghamton University, Binghamton, New York (March 28–May 18, 2019). Photography by Marc Newton.

inspection one realizes that small silhouetted tanks are approaching. Likewise, "Overcast" acrylic on canvas, 89 ¼" x 99" appears to be abstract at first until it reveals itself as overlapping bomber planes, parachutes and explosions. I believe this to be Chwast's ultimate message: war has become so routine that we barely notice it from afar.

The exhibit is accompanied by a handsomely produced catalog designed by Kovacevic, replete with a gatefold featuring the largest work, "The Battle" from 1992, ink on paper, 45 X 260 inches. The catalog includes an introduction by the curator and an essay by long time Chwast friend and associate Steven Heller. It is 10" X 8," cloth bound with stamping, and using the same format it sits comfortably alongside the Museum's previous catalog for Milton Glaser. With reproductions of over 30 pieces of art in four-color and gritty black and white, Chwast certainly inspires the viewer to stop and consider the world around us today.

… AND OTHER SUCH STORIES

The 2019 Chicago Architecture Biennial, Chicago Cultural Center (September 19, 2019–January 5, 2020)
Artistic Director: Yesomi Umolu, Co-Curators: Sepake Angiama and Paulo Tavares (Exhibition Review)

Dennis Doordan

The Chicago Cultural Center, home to the 2019 Chicago Architecture Biennial (CAB), is a paradigm of classical architecture. Designed in 1897 as the city's main library, it is a testament to the civic aspirations of Chicago at the end of the nineteenth century. According to the text panels that greet visitors to the CAB, it is also built on land that is part of the traditional homeland of the Odawa, Ojibwe, and Potawatomi Native American tribes. The marbles and mosaics that adorn the building's grand interiors, visitors are told, are the fruits of exploited labor. The jarring contrast between the idealism characteristic of civic classicism and the unsavory history of land acquisition and construction practices is at the heart of what the CAB curators ask visitors to consider. This is the third incarnation of the CAB, and like its predecessors, it is meant to provoke questions instead of validate the celebrity status of architects. The CAB is huge—more than 80 contributors from 22 countries. The Cultural Center is the primary venue, but the CAB sprawls across the city in a series of "partner sites." It is impossible to capture an exhibition of this size in a short review. If the reviewer cannot describe every exhibit, at least they can explore the curators' intent. Curation involves more than selection; curators assemble arguments by arranging material they have selected. Exhibitions are rhetorical exercises designed to reveal aspects of a particular phenomenon or body of work and persuade viewers to understand the material in a particular way.

For this edition of the CAB, the curators were very clear about their intent. Yesomi Umolu, artistic director of the CAB, and cocurators Sepake Angiama and Paulo Tavares, are interested in what Chicago shares with other urban centers rather than what makes this city special. In their curatorial statement, included in the exhibition catalog, they maintain "Chicago, like many other … global metropolises, face challenging urban conditions that require the reimagining of forms of exchange between human activity, technology, and the natural world. … The urgency to define new vocabularies, new laws and new ethics of cohabitation and cultivation—to forge another 'civic contract' between

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humans and other beings—is especially profound today." So, the visitor asks, what is being reimagined here? Not form, material, or tectonics—the traditional components of architectural thinking—but what terms like "ownership" and "habitation" identify. Furthermore, if in the past architecture has been the manifestation of social injustice, the curators ask how it can become an instrument of social justice going forward.

The answers suggested in this edition of the CAB are not merely stylistic. Here is the challenging heart of this biennial: architecture as societal configuration replaces the traditional understanding of architecture as spatial configuration. There are no "starchitects" celebrated here; few, if any, of these projects will be featured on the covers of glossy magazines. Neither the kind of grand schemes identified with twentieth-century techno-modernism nor the new virtual spaces and tools typical of twenty-first-century digital visions are included. Instead, the curators selected projects that are decidedly site-specific and address local problems in ways tailored to local histories and resources. Rather than arriving as form-givers from some distant cosmopolitan center, the architects and artists included in the CAB operate as codesigners embedded (or at least involved over a long time) in the communities they serve. *Sanitation and Equity,* for example, is a research project by RMA Architects that maps the sanitation landscape of Mumbai and proposes ways to enhance access to potable water and waste disposal systems for underresourced communities. *Landed: Gates et al.* documents Theaster Gates's efforts to acquire, restore, and reactivate abandoned buildings on Chicago's South Side. But this edition of the CAB takes the visitor beyond metropolitan centers. Carolina Caycedo's *The Collapsing of a Model* examines the failure of large-scale energy infrastructure projects in Colombia and Brazil and Somatic Collaborative's *Beyond the City: The South American Hinterlands in the Soils of the 21st Century* looks at the economic, architectural, and environmental impacts of resource extraction across South America.

Sanitation, energy, urban conditions, environmental degradation: this list makes the point that the 2019 CAB was not a glamorous exhibit. But it was not a dreary exhibit either. There are moments that remind us of design's ability to sharpen our perception of the world and identify with the experiences of people we do not know in places we have never been. For this reviewer—a North American white man—one of the most vivid examples of this phenomenon is Vivien Sansour's *Palestine Heirloom Seed Library.* An artist and conservationist, Sansour collects the seeds of plants native to land around Palestinian villages. As these villages have been destroyed or reduced in size to accommodate security measures and the terrain relandscaped and repurposed,

biodiversity has declined. Sansour's effort to conserve the seeds of local herbs and flowers to preserve some part of the taste and scent of village life is an act of memory and, given the political situation in that part of the world, an act of resistance. It is noteworthy that her call to remember and resist is not a call to violence. Instead, it is a call to remember that we are all humans, and all humans possess a dignity and culture that ultimately walls can neither deny nor contain.

Is the *Palestine Heirloom Seed Library* a work of architecture? By any traditional or widely accepted definition of the term, the answer must be no. But its inclusion in CAB vividly illustrates the curators' argument that we must reimagine architecture not as the art of giving form to our world, but as the process of claiming a just, equitable, and healthy place in this world.

Figure 1
Settler Colonial City Project. Decolonizing the Chicago Cultural Center (0061-3971 jpeg). Photo credit: Cory Dewald.

Figure 2
Vivien Sansour. Palestine Heirloom Seed Library (0101-4697.jpg). Photo credit: Cory Dewald.

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