

Design Capabilities for social innovation in a world of “everyone a changemaker”

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Abstract

I elaborate on a trans-disciplinary concept of Design Capabilities to “insert design thinking” into the capability approach for human development. Design capabilities integrates the “capabilities approach” with “design thinking” for social innovation in a world of “everyone a changemaker”. “Changemakers” refers to ordinary individuals equipped so as to be engaged in exploring relevant solutions to persistent societal problems (Drayton, 2006), from the local level (food access) to national (democracy), to global (climate change). “Design thinking” (DT) refers to the mindsets and practices of designers applied for social innovation (i.e., Brown and Wyatt, 2010). The Capabilities Approach (CA) is a wide-spread framework for assessing social policies in terms of “expanding freedoms to do more and be more, in ways we have reason to value” (i.e., UNDP, 1990). At the intersection of these fields lies the concept of Design Capabilities.

Design Capabilities offers a way to cultivate and value the spread of design mindsets for ordinary changemakers everywhere to be better able to address complex, wicked problems. Valuing design as “mindsets” that anyone ought to be able to cultivate supports their individual agency and a range of intrinsic human capabilities such as health, knowledge, play, and affiliation. I explore different ways that design thinking intersects with these capabilities. I illustrate the approach with examples from a project working with young adults in urban New Orleans to address food insecurity.

My paper joins several conversations at the intersection of design theory and thinking, social innovation and changemaking, and complex social-technical-environmental problems. In a world where “everyone designs” (e.g., Manzini, 2015) “expert” designers can serve as triggers for action and facilitators for ordinary people in co-designing desired futures. Calls for “decolonizing” design (Irani, 2010; Tunstall 2013) echo calls to decolonize knowledge and development (Apffel-Marglin and Marglin, 1996) and replace “one-way transfers of knowledge and technology by dialogue and mutual learning”. Scholars are bringing attention to systematic structures of inequity, exclusion, and power dynamics in design education and practice (i.e., Cairns, 2017; Noel, 2016). My work also aims to enrich the scholarship on capabilities approach to human development (i.e., Deneulin, 2006; Ibrahim and Tiwari 2014) with an explicit focus on design in relation to capability expansion.

Keywords: Design Capabilities, Capabilities Approach, design thinking, diffuse design, changemaking, social innovation, wicked problems, complexity, ecosystem thinking

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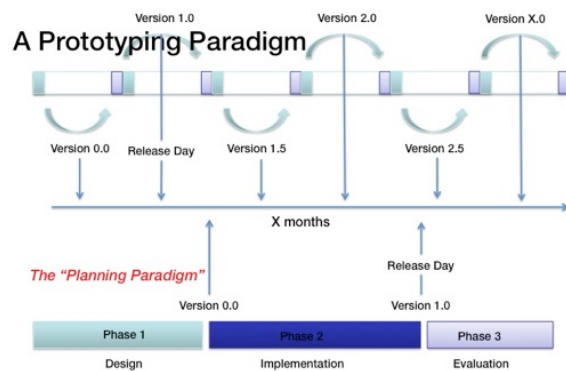
1. Introduction: 21st Century Wicked Problems need Changemakers with Design Capabilities

In this paper, I propose Design Capabilities as a way to envision “design-thinking” as offering support for individual agency and intrinsic capabilities, while also offering instrumental utility in achieving valued aims—especially in light of major challenges we face, like climate change. This paper is part of a larger project of mine to explore the intersections of development, design, and complexity sciences for societal problem solving. This first section sets the global stage for my call for “Design Capabilities” for ordinary changemakers to be better equipped to address wicked problems and to support their overall well-being.

“Wicked” problems are characterized by high levels of ambiguity, different perspectives on the problem, unpredictability, dynamics, and ignorance—we don’t know what we don’t know (Rittel and Weber, 1973). The problems we face are ill-defined and can never be solved, only re-solved. Wicked problems of the 1970s included urban crime and inner-city poverty. In the 21st century, these problems have only worsened. Today’s challenges are not just wicked, but “super wicked”. They are globally connected wicked problems. Rapid, multi-faceted, and multi-dimensional globalization leads to growing interconnectedness of social, economic, financial, technological, and natural (earth) systems. We see the results of these systems and non-linear, irreversible impacts when something goes wrong—like our overheating climate.

These problems have surpassed our ability to address them with conventional policy approaches and “planning paradigms” that aim for utility, technical efficiencies, and productivity (i.e., over resilience, adaptability, risk minimization, and ecological sustainability). They tend to use mental models from industry and machine metaphors of blueprints, levers, and gears. These predominantly western approaches to societal problem-solving/policy-making date from the 19th Century and build on Newtonian physics. A different, contemporary scientific paradigm offers complexity as an epistemological framework for knowledge (i.e., Capra, 1996). Grounded in quantum physics and organic living ecosystems, this paradigm offers a worldview, metaphors, and reality-check. Human, socio-technical systems are interconnected, characterized by non-linear change and feedback, shaped by path dependency, with unintended side effects. Larger system properties are emergent—they cannot be predicted from the individual elements. This represents an organic “ecosystem” way of thinking. It calls for different theories of change, ways to understand systems, conceive interventions, and conduct evaluations (i.e., Boulton et al 2015; Burns and Worsley, 2015; Jones, 2012; Quinn Patton, 2010; Ramalingam, 2012).

Instead, the face of wicked problems and complexity, intelligent action calls for small action steps, continued learning, and adapting. Instead of single linear planning cycle based on mountains of evidence, extended implementation, then eventual testing/feedback; we should use faster, shorter cycles of action and learning: a “prototyping paradigm” (see figure 1) compares prototyping vs. the older planning paradigm.



About here Figure 1: Prototyping Paradigm vs. Planning Paradigm

A prototyping paradigm embodies a spirit of rapid development of an idea, working in fast cycles of development and feedback. Modern software development (Agile) is one model. Another is Social Labs, multi-stakeholder platforms for addressing complex problems at scale (Hassan, 2014). We can get vital feedback from humans and other system elements --such as markets, materials, and the natural environment. Smaller experiments can find out what works (and what does not) at lower risk and lower cost. Multiple iterations allow us to learn and improve the prototype for more realistic conditions. This context of adaptive learning and trial and error calls for design “thinking”.

2. Introduction to Design Thinking for Changemaking

This section provides a brief overview of “design thinking” for changemaking and social innovation. It is based on my experience in teaching design thinking, mostly from a base at Tulane University’s social innovation programs and for and with various audiences and community organizations (see Murphy and Faughnan, 2017).

In essence, design thinking is an intentional process drawing from “what designers do”. Design thinking is referred to as a useful way to generate solutions to “wicked problems” (Kolko, 2012). It is often seen as an innovation process that can be applied to changemaking (Ashoka U) and social innovation (Mulgan, 2006; Brown & Wyatt, 2010). The aim is to surface new solutions to persistent problems or to find new opportunities, especially in a marketplace. Always, one is keeping in mind the specific, human “users” of new systems, services, experiences, or products. DT for changemaking applies this to social impact (below).

“DT” is also about the mindsets. Design mindsets refers to different attitudes of observing, learning, processing, analyzing, creating something and, testing. It values different, multiple forms of knowledge and ways of thinking. Employing designer’s lenses means not being stuck in critical analysis or in prescriptive models but drawing on other tools and instincts for creative and new ideas.

For example, characteristic ways of thinking, doing and working as a designer emphasize:

- “Beginner’s mind” means setting aside preconceptions, taking a fresh look as if a novice or young child.
- Being non-judgmental, open, and willing to build on others in creating something new.
- An optimistic mindset asking: “How might we...?” (Not = “People should ...”).
- Having a “bias to action” and to be willing to try something out, such as making a rapid, rough prototype to share with another to learn something (in contrast to a bias towards continued discussion, data collection, and analysis).
- Improvising: Take a “Yes, And!” and a playful, generative stance.

“DT” also relates to mindsets related to the original challenge “brief” and underlying systems, i.e.,

- Reframing the problems: Taking the large design brief (“Address food deserts in urban areas”) and narrowing down to smaller challenges based on information about constraints, and context, for example (“Make more affordable fresh food options available via existing sales outlets”)
- Refining those problems: Finding out what’s really at stake for the humans and others involved and exploring different aspects of it.
- An experimental stance, exploring ideas in the real-world and learning.
- An iterative process: using multiple cycles of discovery, generating new ideas, and testing.

Overall, design thinking in popular use in the USA is often synonymous with human-centered design (HCD), which has a clear focus on “humans” as the intended end-users of the newly designed systems or solutions. David Kelly, founder of global design firm IDEO and of the “d.school” at Stanford, emphasized that design “thinking” recognizes characteristic design-based ways of thinking about situations, people, problems, and opportunities, and highlighted “creative confidence” as a quality to enhance in everyone (Kelley and Kelley, 2014). Design “thinking” refers to building empathy with people, and not just making new gadgets. This “design thinking (at least in the US model of human-centered design) arose in professional design fields, especially product design, user-experience (UX), computer-human interaction (CHI), service design as well as graphic design and architecture. It has created new professional fields of social impact design, social design, design thinking for social good, and transitions design, seen in post-graduate programs at SVA, MICA, CCA, Carnegie Mellon and other design schools and colleges).

Design thinking is trendy in US business, entrepreneurship, development industry and higher education. Design for social innovation, development and change-making generally is becoming more visible in new projects, flows of funding, positions, and practices across many sectors.

- Frameworks and methods that are increasingly accessible to people around the world via online learning platforms, such as +Acumen; free “Method cards” such as the Bootcamp bootleg of the Stanford d.school or Institute of Design), and Guidebooks, such as the *HCD Field Guide* by IDEO, and frog design’s Innovation toolkit.
- Non-governmental and UN organizations, such as Concern Worldwide, Nesta (UK charity), UNICEF, UNDP, UNHCR have Innovation labs, programs, initiatives, or staff.
- Donors (e.g., Gates, Hewlett, USAID) engage professional design thinkers to bring fresh thinking to address humanitarian and development problems.
- UK and US governmental policy arenas are adopting design thinking for the public sector (i.e., the Innovation Lab in the USG Office of Personnel Management).

Beyond design “thinking” to *being*:

Mainstream strands of “design thinking” such as described above arise from—and tend to privilege—dominant western intellectual theories, and modernist, corporate, and professional practices and institutions, whether in major corporations, government, or international development aid agencies. As an example of modernist, positivist ways of thinking: Applications of human-centered design (HCD) thinking within global development and global health often employ an instrumental view of design thinking and a “planning paradigm” (as in Figure 1). In this case, HCD is a specialized modern technical input of professional experts applied in linear planning processes, based in rigorous scientific evidence, and aimed at achieving pre-determined outcomes for specific populations of needy beneficiaries (e.g., USAID HCD Engage; UNICEF; Bazzano et al 2017; Vechakul et al, 2016).

Other views and design practices are emerging from post-structuralist, ontological philosophy, and critical theory perspectives. These include theories of post-colonial design for human-computer interaction (Irani et al 2010) and scholars who encourage us to go beyond the liberal worldview embodied by “DT” and call for “decolonizing” design (Tunstall, 2013; Ansari et al. 2016). Other scholars are also bringing attention to power dynamics involved in any designing, especially on behalf of marginalized people (i.e., Cairns, 2017) and the need for “emancipatory” approaches to design education and design research (Noel, 2016). Critical design practices that reflect these values include equity-centered design (Creative Reaction Lab, in the US). The Innovators Compass by Ela Ben-Ur (2019) offers an open-source framework offering design approaches to help anyone to “get unstuck”, whether aged 9 or 90, in any setting.

Design theorist Anne-Marie Willis (2006) introduced ontological design noting that “...designing is fundamental to being human ... we deliberate, plan and scheme in ways which prefigure our actions and makings – in turn we are designed by our designing ...”. The Colombian-American anthropologist Arturo Escobar (2018) integrates these strands of design theory, decolonizing knowledge, ecological crises, complexity science, and post-structural analysis of social movements calling for designs for the pluriverse.

Italian design educator Ezio Manzini (2015) sees a role for expert design professionals as facilitators of “diffuse design” by ordinary citizens to develop new and useful social (i.e., public) innovations, or triggers or artists provoking new ideas. He offered examples of the Slow Food Movement and community-supported agriculture in rural China. Manzini’s latest book (2019) extends this attention on the citizen and their role in design by and with “everyone” for the common good and for a flourishing society. Manzini suggested that ordinary people can learn design thinking through field guides and online courses—they can expand their design “capabilities” to be part of co-design working with professional designers. He did not elaborate what these design capabilities are, however.

A broad-ranging questioning perspective on the place of design in society is not entirely new. Richard Buchanan (1992) argued that “design thinking” is a way to solve complex societal problems and thus comprises a new “liberal art of technological culture”. What is new, it seems, are the changing worldviews and ways of knowing, embracing plural and critical forms; a widespread disenchantment with corporate and private sector dominance in society and rising inequality and destruction, the increasingly complex nature of societal challenges.

3. The Capabilities Approach for Human Development

This section offers background on capabilities as (1) a philosophical, normative, universal account of human flourishing and well-being and (2) as an approach to conceiving and assessing policies and programs. Capabilities approach offers an ethical framework to complement the ontological, epistemological, and solution/action-oriented frameworks introduced so far.

The “capabilities approach” (CA) underlies the “human development” (HD) school of thought on pathways to social progress and how we evaluate them. The purpose of global development efforts, aid and social policies is not national economic growth. This could lead to instrumental uses of people for other ends, such as when we speak of “human capital” as an input to a growing national economy. Instead, Amartya Sen argued, **people are the ends**, not the means. The desired aim of social arrangements and policies is to “enhance freedoms” of people to “do more and be more” in ways that they “have reason to value.” Amartya Sen’s 1999 book, *Development as Freedom*, made popular his academic work from the 1980s on topics of human well-being. Martha Nussbaum extended Sen’s work from the 1980s (Nussbaum, 2000) for country frameworks, policies and constitutions, suggesting a list of “ten central capabilities” that are an accessible jumping off point for discussion. Three key concepts are Capabilities, Functionings, and Agency.

Capabilities are what we are potentially able to do and be, thanks to our place of birth, time in history, social and genetic birthright, etc. These are distinguished from our Functionings, which are the things we each actually, individually choose to do and be, given our capability set. Functionings are more easily measured, but capabilities are what “development” action (social policies, social change efforts) should aim for.

A common example used to distinguish the underlying capability from the more visible functioning is around food security. A measure of food and health is the body-mass indicator (BMI, a functioning). Consider two individuals with the same low, unhealthy body-mass indicators (BMI), reflecting inadequate nutrition.

- One individual is a refugee, whose central capability to be well-nourished is outside her control.
- Another individual is on a hunger strike: she chooses to refuse food to make a political statement that is under her control, exercising her practical reason and agency.
- The underlying capability to choose to be nourished is the correct “evaluative space”, since relying on BMI on its own can introduce distortions, making each individual similarly “deprived” by neglecting their agency and reason.

The expansion of individual agency is about enhancing the ability of an individual to act. It refers to seeing each person as a “doer and a judge” (Sen quoted in Deneulin 2006 p. 10) and not a “beneficiary”. He/she is able to assess a situation and take action and influence the world.

A basic capability set includes the range of positive “freedoms” to do and be that we believe are part of what makes any human life meaningful. While Amartya Sen declined to specify or name these capabilities, leaving it up to other societies to determine for themselves, Martha Nussbaum (1990) elaborated ten “central capabilities” that she argues should be embedded in any country’s constitutions to help ensure that the most basic central capabilities for all people are recognized and promoted. See Table 1 for an elaboration of Nussbaum’s central capabilities. *Life, Bodily health, Bodily integrity; Senses, Imagination, and Thought; Emotions; Practical Reason; Affiliation; Other Species; Play; Control over one’s environment* (political and material). The ten allow for local, country-level adaption, following democratic and deliberative processes that respect individuals as ends in themselves.

This approach is intended to be universally applicable, ethically individualistic, and inter-related to human rights. One of Amartya Sen’s goals was to identify a better “evaluative space” for social policies and arrangements than the dominant GDP or other economic measures.

Poverty is not just “lack of cash income” but should be seen as **multi-dimensional “deprivations of capabilities”** or lack of valued freedoms. Development is thus about “expanding freedoms”, but these freedoms are not just more choices as in neoliberal economic (such as having more varieties of toothpaste for sale).

The case of a bicycle is often used to illustrate these concepts. A bicycle is not just a way to earn income and thus promote economic growth.

- A bicycle can give mobility, which can promote various underlying freedoms, but these must be ‘translated’ into visible functionings.
- A person who is unable to ride a bicycle for any reason cannot translate the technology into a valued freedom or possibility to act, nor the actual functioning of having income for material goods, the happiness of visiting friends, the security one feels in being part of a self-help group, or the joy of getting exercise and leisure.
- These are shaped by the larger context, such as cultural norms (that might prevent a woman from riding a bicycle), poor infrastructure (lack of streets), geography and climate.

One well-known application is the human development index (HDI of the UN Development Program (UNDP 1990). The Human Development Index (HDI) aims to capture the underlying capabilities or freedoms of (1) life and bodily integrity (using standard indicators of Life expectancy), (2) access to material goods (using standard PPP adjusted income), and (3) knowledge (using available national

enrollment and schooling indicators). From these three measures, an aggregate, weighted measure is calculated for the nation.

The HDI is thus a crude indicator capturing selected functionings across the full range of capabilities. It is an improvement on GDP and other narrow economic growth measures.

Since the capabilities approach offers ways of thinking about universal human possibilities, it offers an “evaluative space” for not just formal policies, but also for social innovations, community development, technology change, and thinking about what it means for “everyone” to be a changemaker”. It can help us make sense of what people do when other frameworks fall short.

For example, research by the author (Murphy and Priebe, 2009) on the spread of novel cellphones among low-income rural Kenyans in off-grid villages from about 2004-8 revealed that the devices, while costly to acquire and maintain, are meaningful --- but not necessarily for farm-based income-generation. Especially among women, cellphones were valued as ways to:

- Connect family members and overcome loneliness.
- Help women get to church meetings and self-help groups.
- Provide peace of mind. They help one “know what is happening.”
- Add richness and value to life in non-quantifiable, non-tangible, non-economic ways.
- And, also can help generate income, but that was not central.

For these women, cellphone connectivity expands valued possibilities; capabilities expressed in Nussbaum’s concepts of health, emotion, affiliation, and practical reason. The capabilities approach is thus a framework that gives voice to people’s actions and choices in context.

Clearly, the CA is not just useful for guiding aid projects in the “developing world”. Capabilities can assess policies and social actions in economically affluent, “developed” settings. Amartya Sen wrote of many serious deprivations of capabilities of bodily integrity, health, political affiliation, access to play, and agency in the USA, especially among African American populations (Sen, 1999). In that sense, this CA approach has elements in common with other alternative measures of policies beyond economic growth, such as the happiness index.

The CA is widely recognized and used in practice and research and is continually being expanded (and challenged) by practitioners and through scholarship. The expansion of thinking around CA continues by many scholars (Alkire, 2002; Deneulin, 2006 and others) who aim to enhance appreciation for capability set, to explore inter-relationships among capabilities, outline group and collective capabilities, and consider capabilities as an approach to “praxis” or action. Agency is often viewed as a quality of an individual, but it can pertain to a collective; relational agency is an emerging area. Researchers are advancing methodological aspects such as data collection and measurement, and advances in quantitative approaches and in qualitative enquiry.

In the field of social innovation, recent research has explored the Capabilities Approach to assess processes as well as outcomes for marginalized peoples. Tiwari (2014, 2017) explored social innovation with self-help groups and co-operatives in India; Matthews’ (2017, pp.) research in western Africa argues for the respect and support for local, creative responses—the “innovation processes originating in marginalized communities themselves.”

We can see that individual agency, creativity, resourcefulness, affiliation, and imagination are all valued freedoms “to do more and be more”. These present gaps in opportunities to lead a flourishing life that are felt particularly by vulnerable people around the world.

4. Introducing “Design Capabilities” at the Intersection

While the Capabilities Approach is widely appreciated as the appropriate normative space for societal arrangements; few scholars have explicitly explored the “capability set” with reference to design and design thinking. We saw that one mention was by Italian scholar Ezio Manzini, who referred to Sen and Nussbaum and the “capability approach” in his discussions of diffuse design (2015). His term “design capabilities” refers to the ability of a person to participate in societal co-design processes (with expert designers helping in some way) and also to create their life project.

In this section, I elaborate on this emerging concept that is arising at the intersection of design for public good, a complexity worldview, and human capabilities and well-being. In particular, I relate design mindsets with the capabilities approach. I do this in relation to agency and the ten “central capabilities” proposed by Martha Nussbaum. The Commentary elaborates on the intersections. Section 5 below offers and illustration from New Orleans.

Table 1: Design Mindsets in the Central Capabilities

<u>Capability Concept</u>	<u>Some Design Mindsets</u>
<p>1. Agency <i>From Deneulin: “The ability to act, do, and influence the world.”</i></p>	<p>Creative Confidence</p>

Commentary: Having agency means seeing oneself as able to envision and intervene in the world. This shows up in all the mindsets of design. Without some agency an individual cannot envision creating something; they cannot have “creative confidence”, come up with ideas, share them with others, and receive feedback. In design activities, they would have trouble taking on a “beginners’ mind”. There are inter-relationships with affiliation and practical reason: we can only have partial information, and we don’t know what we don’t know—yet, by growing in our agency, we can still imagine, and act, and learn.

<p>2. Life, Bodily Health, 3. Bodily Integrity <i>From Nussbaum: Being able to have good health, including reproductive health: to be adequately nourished; to have adequate shelter.</i></p>	<p>Human-Centered</p>
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Commentary: Without health, it is difficult for an individual to participate in design or pursue other capabilities. Having the capability to rest, be nourished, health --to have physical and mental capacity -- is essential for taking part in actively designing with others. Design reinforces reflexive, mindful, balanced care for self (linking to empathy). This reflects the “human-centered” mindset of design thinking. It aims to be non-judgmental of humans, but these can be constraints (i.e., for behavior change to improve health). At the same time, the pursuit of bodily health and bodily integrity are often highly valued ends of instrumental design processes (i.e., USAID Engage).

4. Senses, Imagination and Thought

Creativity

Nussbaum: Being able to use the senses, to imagine, think and reason; being able to use imagination and thought; being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise; being able to have pleasurable experiences and to avoid non-beneficial pain.

Commentary: Design thinking is intended to and assumed to be creative (although this can take different forms and is in context). Individuals need to have an imagination, or be able to activate that, to take part in envisioning and creating something new. Design captures and builds on plural forms of knowledge, from empathetic understanding, to external inspiration, to survey data on a population/market, to materials and making, to tangible feedback from others. Paying attention helps us observe, learn together, generate relevant knowledge, and be more constructive in conversations, political actions, and design. The classic "How might we" (HMW) framing calls for an requires an imagination to enact.

5. Emotions

Empathy

Nussbaum: Being able to love, to grieve, to experience longing, gratitude and justified anger; not having one's emotional development blighted by fear and anxiety.

Commentary: Empathy is a "muscle" that we can cultivate and strengthen to use effectively to understand other human-beings, and ourselves. (It is not just a compassionate feeling of general concern for others.) Design research focusing on empathy can help accept the emotional conditions of an individual including those who faces deprivations of emotional capabilities. Shadowing, empathy methods help insert a researcher into another's' reality. The aim in human-centered design is to embrace the human emotional world and offer non-judgmental insights and solutions. A user-journey map documents an emotional experience, to reduce pain and enhance joy. We might reframe a problem to improve the emotional experience (more joy, less pain) when the context itself cannot be redesigned—such as the experience for children going through an MRI machine. Furthermore, recognizing our common humanity and interconnectedness –by building on empathy and emotional capabilities-- we can learn and act together towards thoughtful, dignified, and relevant social goods for other people.

6. Practical Reason

| Problem Redefinition, Convergent/Divergent Thinking

Nussbaum: Being able to form a conception of the good and to engage in critical reflection about the planning of one's life (conscience, religious observance)

Commentary: Design mindsets and practice helps one reflect on the given problem, explore it, question it, and reframe it --based on reality. Design calls for organizing our attention to deploy different mindsets of generating ideas (divergent thinking) as well as making decisions and narrowing down (convergent thinking). An individual becomes more conscious of their own modes of thinking and able to shift those more intentionally.

7. Affiliation

| Empathy, Radical Collaboration

Nussbaum: A. being able to live with and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another B. Having the social bases of self-respect and no-humiliation, being able to be treated as a dignified being whose worth is equal to that of others (includes non-discrimination).

Commentary: Design training promotes working in diverse teams to promote more ideas, learning, parallel work. Rapid prototyping encourages designers to make ideas tangible in ways that others can interact with and offer suggestions. Empathy or human-centered focus is related to Emotions, but relevant for interacting with others. Reflexive empathy and design practice will build self-esteem and agency, in turn.

8. Other species | **Redefining problems, System-thinking**
Nussbaum: being able to live with concern for and in relation to animals, plants and the world of nature.

Commentary: Nussbaum highlighted that we live in relation to earth, resources, and other species, and this is a fundamental capability that should be promoted and respected. In designing, this can show up in setting constraints of ecological sustainability, or an insight and appreciation for the value of vegetarianism for others (“end-users”). A “human-centered” mindset does not mean we remain ignorant of nature, other species, resource constraints, and the aesthetic, ethical and spiritual dimensions of the natural world. This capability can lead to seeking inspiration from nature (i.e. via biomimicry, another design-discipline). In terms of evaluating societal designs, this capability can call us to critique existing societal structures, such as the dominance of petrochemical-based production-consumption systems.

9. Play | **Beginners mind, Yes, And!**
Nussbaum: Being able to laugh, to play, and to enjoy recreational activities.

Commentary: Play is a human right and a developmental need for young children. As a design capability, we value children’s access to play—and this becomes a motivation to support design education for children as part of play. Play is not just for children, however. Among youth and adults, having experience of having played, and knowing how to play, is essential for recreation and creation. Designing calls for, and reinforces an attitude and capacity for playfulness, even in adults. Mindsets of designing that relate to Play include being able to take on a “beginner’s mind” attitude of seeing as a child. It can relate to creative confidence, in being able to play with ideas and with others. The “Yes, And!” Mindset refers to playing along with others in word games and improvisational activities. It is valuable and encouraged as part of what it means to design—to create something. Abilities to play can be aligned towards more play, in itself or towards meaningful (serious) ends such as food security.

10. Control over one’s environment | **Critical Thinking, Radical Collaboration**
Nussbaum: A. Political...participate effectively in political choices....have right of political participation. B. Material Being able to hold property (land and goods), having property rights, having right to seek employment on an equal basis with others; having freedom from unwarranted search and seizure. In work, being able to work as a human being, exercising practical reason and entering into meaningful relationships of mutual recognition with other workers.

Commentary: Design mindsets enhances citizen’s ability to be critically aware of systems that we live in, what is wrong with them (from a normative or rights point of view) that they are also “designed”. Governments and state structures are arrangements as created by others (in the past, and/or by more powerful) --- that often deprive certain groups of people of valued capabilities. Thus, these are societal “bad designs”—offering opportunities and potentials for redesigning, at least in part. (Examples might be electoral systems, voting restrictions, Jim Crow

policies such as redlining in the US.) At the same time, viewing other people as citizens with rights offers motivation for redesigning these systems to work better. Learning mindsets of Radical collaboration refers to teams and working across disciplines, specialties, expertise, language, economic class, educational differences to bring more perspectives and promote creative thinking.

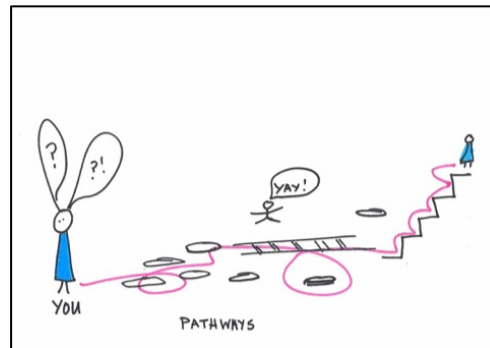
Design in the capabilities approach

To reiterate, this section has linked some characteristic design mindsets to Agency and Central Capabilities (following Nussbaum's model).

- Design mindsets show up as intrinsic freedoms valuable for individual well-being, as well as being of instrumental value for other ends.
- These design capabilities are inter-related, as advancing one can support others.
- They are “universal” in that the capabilities approach intends to reflect a common understanding of human flourishing across cultures and time (needing deliberation to be locally adapted).

From this vantage point, learning “design thinking” can be of value to anyone, in principle, as it can enhance an individual's core capabilities and advance agency.

The value and growth in Design Capabilities will vary by individual, though. Each person converts their capability set of possibilities to different functionings based on their own context and values-- applying their practical reason.



This intrinsic focus is in contrast to an “instrumental” view of “design thinking” that is dominant in many educational and organizational settings, especially in development and public health. In that case, “design thinking” is a technical, professional skillset to be used instrumentally for more efficiently reaching ends, whether profit or social aims. These ends might be reaching other humans as end-users, customers of new products and services, and/or beneficiaries of new societal goods. Observers might ask “does design thinking work for those ends, more efficiently?”. This stance is not bad in itself, but it is different from promoting design capabilities. “Design” can also be seen as a hard skill for a young person to get a specific job, and a set of “soft skills” to be more employable, professional, and able to function in work settings. The next section illustrates these different understandings of the value of design in practice.

5. The Design Krewe: An Illustration from New Orleans

To illustrate Design Capabilities, I draw on a design-led project that I was involved with from 2017-18. We worked with disadvantaged youth in New Orleans as part of a project that aimed to find “solutions” or at least some new ideas to address problems of lack of fresh food as an aspect of food-insecurity. These efforts supported Design Capabilities of intrinsic value to the youth. As well, design had instrumental value in finding some new ideas for “food deserts” in a short time.

This illustration (1) reveals the potential value of a Design Capabilities lens in relation to other “evaluative spaces”. It also (2) Offers an example of Design Capabilities for changemakers –in this case, disadvantaged youth, and non-professional designers.

(A note on sources: The quotes come from project notes (Stewart, 2019) and a video that is publicly available: the video, Miller et al 2018. These observations are meant as illustrations of the concept and not an assessment of individual participants.)

5.1 Background to the Design Krewe

In New Orleans, many young people receive poor quality education, don’t make it to college, and have trouble finding well-paid and meaningful work. The service industry is a large employer and pays poorly. African American youth are particularly affected by a legacy of racism, Jim Crow policies, segregation, red-lining, and more. These youth are part of the under-employed, “at-risk” cohort some policymakers refer to optimistically as “opportunity youth”. One leader of the host organization, Liberty’s Kitchen, noted these young people are “disadvantaged” in many ways leading to “gaps in critical thinking” (in Miller 2018). In response, several charities and social enterprises have emerged to offer skills, training, and a supportive environment to help youth overcome various interacting deprivations. Some focus on hard work-skills; other are more holistic.

The Origins of the Project

One organization working with youth to offer practical and leadership training for restaurant trades and related workforce skills is a non-profit organization called Liberty’s Kitchen (LK). It was founded in 2009, after Hurricane Katrina devastated the city. At LK, young adults can learn kitchen, food-industry, and hospitality skills. A Leadership Program that offers advanced apprenticeship and more professional development.

Working with LK in “fresh food innovations” is TopBox Foods (TBF). TBF is a social enterprise that sources affordable fresh food, compiles low-cost food boxes (\$20), and distributes them to low-income households through a network of churches and corner stores. In 2015, a founder of TBF (SH) had taken a course in design thinking at Tulane University (as part of his minor in SISE alongside his major in business). He saw design thinking as an “...awesome way to tackle complex problems with ...mindsets and frameworks.” He conceived of a project to integrate design thinking into their program so as to help them to develop their own, entrepreneurial ideas for fresh food solutions for numerous “food deserts” – neighborhoods where residents are over a mile from a grocery store.

The aim was to recruit about 8-10 young people, train them with basics of design thinking, and then to apply them in a neighborhood setting. The project was part of community-based food security, funded by USDA. Through the author, the project was supported as well by a Tulane Center, TAYLOR.

The Design Krewe Training and Sprint

Building on the relationships with TBF over 2016-2017, a small team (the author included) designed a series of hands-on workshops to teach design mindsets and methods. The project kicked off in fall 2017 with a short “crash course” in human-centered design. It was open to any of the staff and youth in the organization, and about 40 people showed up.

We addressed the problem or “design challenge” of “making groceries”. We asked them to find ways to improve the shopping experience for a partner. We led them through an exercise that explored mindsets mentioned above.

From that first, rather lighthearted exposure to design mindsets, 10 young men and women were recruited. They were predisposed to the open, creative process and were willing to work with us for 5-10 hours/week for 6 months of further training and real-life design sprint. In the spirit of New Orleans “krewes” that operate year-round to run Mardi Gras parades, floats, balls and other events; we called the team a “Design Krewe”.

Design Krewe activities started out in a flexible classroom space at the non-profit’s home offices. There the DK team developed their capabilities with each other in a safe space with each other, trainers, and other staff to observe and offer feedback (modeling their potential consumers).

Eventually, the Design Krewe youth stepped out of the classroom/studio space. They

- Observed shoppers at produce and supermarkets;
- Gathered prices and production skills;
- Visited neighborhood groups and elderly resident’s kitchens.

They also

- Shared data with each other;
- Sought patterns;
- Found pertinent, small insights around their main audience.

Elderly, low-income men and women were their main “user group”. Aiming to reach this group, they:

- Developed rough, paper-based prototypes of “grab-n-go” portable salads and yogurt parfaits;
- Shared those first with mentors for feedback on taste and portion size (among other aspects);
- Developed real food products and tested them with senior citizens re recipes, taste, and price.

They not only learned to make the products as food preparers in commercial kitchens, but to envision and develop new ideas and test them with real people.

5.2 Exploration of Capabilities in the Design Krewe Experience

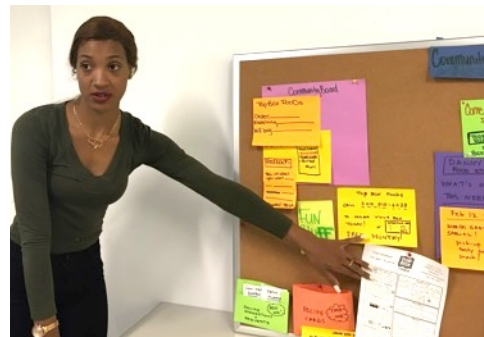
Working around their erratic and difficult schedules with local restaurants, these young cooks and food professionals learned several new “design mindsets” and expanded their own agency and “ways of being and doing”. The project supported their intrinsic and instrumental design capabilities. Specific capabilities are elaborated here as they emerged through design, with examples from different participants.

Emotions

The Design Krewe cultivated empathy as a valued form of knowledge. One example is Andryan’s rapid prototype of a “Community health bulletin board” (see Figure 2).

About here, Figure 2. The Capability of Emotions: Empathy in Action

Andryan’s response was a bulletin board to sit next to elevators to share news of what’s in stock that day. This was unexpected and novel. It was not related to what could be made in their kitchen.



In the photo, Andryan is showing her very rough, rapid prototype of a “Community health bulletin board” to fellow youth and staff for feedback. The board would be posted next to the elevators in the 8-floor apartment complex (Guste Housing) that was home to many of the senior citizens who were involved in the pilot and intended customers. The board would communicate to the elder residents the healthy prepared foods that would be available at a corner store across the street. This came from her on-the-ground experience in the actual location, her deep familiarity with the people involved that led to her simple, empathetic insight: How would these senior citizens with limited mobility (some in wheelchairs) living in a high-rise housing unit actually know what was available in the corner store across the busy avenue?

Affiliation

The Design Krewe members experienced group work in new forms, which enhanced the capability of affiliation. Design methods gave them ways to work with each other, with the senior citizens, and with supervisors in the organization. They formed into design teams to develop ideas. Sharing prototypes-- of containers, food items, and labelling-- and intentionally gathering feedback from mock or actual “users” --was one new way of working together. They ran focus group discussions with housing residents, sharing their ideas for tasting. They developed relationships with the elders they hoped to serve as their end-users/customers in a marketplace.

Ahmaad recalls in the video (Miller, 2018) the experience of what it was like to “see smiles, see reactions...” of the Guste Housing senior citizens. The Krewe introduced their new food items to the seniors; they found they had “never heard of humus” and “learned to like it” (among other reactions.) Phil commented on “amazing people” at Guste Housing. The DK team are interacting as young professionals, designers, and working adults in new ways with elderly people of their grandparents’ generation.

A final photo shoot captured portraits of the young people and seniors outside a local corner store (See Figure X).



Senses, Imagination and Thought

The design training and practice supported these central capabilities of *Senses, Imagination and Thought* -- how to learn, how to manage thoughts and thinking, how to generate ideas, how to decide or choose, and how to discern insights. They all built their imagination and creative confidence—the ability to come up with new ideas. Brainstorming was one method. They learned how to learn—ways to gather data from observing the world first-hand. One example is Andryan’s prototype bulletin board. Another experience of the Design Krewe team was watching how Whole Foods grocery store consumers interacted with the actual refrigerator cases in the supermarket, so they can inform their labeling and messaging.

Practical Reason

The design project seemed to enhance the practical reason and ways of thinking and reasoning. They learned “divergent” and “convergent” thinking, i.e., learning when and to harness their attention to create ideas and stay open (divergent) and when and how to decide or narrow down (convergent). They saw that they could value and draw from their own life experiences (“making groceries”, the initial practice challenge), as they saw these echoed in others’.

The youth learned practical problem-solving tools, like how to break up the much larger problem of fixing “urban fresh food deserts” into smaller questions: “How can we get some tasty fresh foods into the corner stores where they already shop?” They learned how to organize time and attention on relevant details, like portion size, and not worry about recycling or sustainability issues for this particular audience. In the photo, the youth are mid-stream in a process of exploring: Should it be reusable? Or disposable best? Is 7 oz appropriate or should it be 9 oz? They learned to navigate the many aspects of the new design by breaking it into smaller pieces and experimenting with each and getting feedback in real time.

*In Photo 3: Capability of Practical Reason.
Liberty and Kiall are exploring the fine details of
different packaging options.*



Agency

Agency is central and mutually-reinforcing: these lay designers and changemakers built their agency and other capabilities. The DK project unleashed creative capabilities, tapped into playfulness, expanded collaboration skills, and ways to be with others. Each of these capabilities reinforced others.

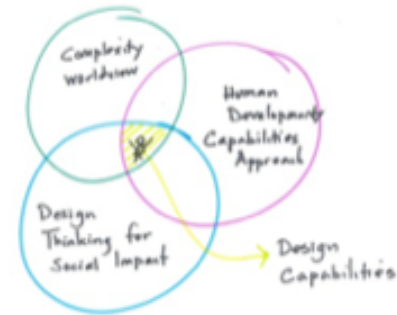
Ahmaad summed up what he learned and experienced: We “saw a problem, had ideas, were able to collaborate, synthesize, make tangible ideas to fight food insecurity” (in the short video: Miller, 2018) Ahmaad went on to learn more design skills, and is winning an award this month at an annual gala.

6. Discussion: Design Capabilities for Everyone a Changemaker

The review of capabilities above revealed intrinsic freedoms enhanced through learning design mindsets in a real-life setting. The Design Krewe project served low-income, disadvantaged youth living in New Orleans who face intertwined structural challenges around education, employment, housing, related to history, policies, and structural barriers beyond the scope of the project. The young people learned new designs and skills-building via training, coaching and actual design challenges in a mutually reinforcing process. The project did not solely aim to build hard skills-- but it did some of that. The project provided the youth with identifiable job skills to go on a resume. It did not aim only for “fresh food solutions”, although it supported the entrepreneurial dimensions of the leadership program and helped generate marketable healthy foods.

These intrinsic and instrumental values were reinforcing. Practice reinforced individual capabilities, and vice versa. Without the real-life instrumental aspect of serving others through the design sprint, the intrinsic capabilities would not have been reinforced.

This illustration hopefully demonstrates that design is embedded in the Capabilities Approach, and vice versa. Design enriches the Capability Approach as a set of basic, positive freedoms to “do more and be more in ways that one has “reason to value”. These are valued freedoms that can be translated by people in different ways into more visible functionings. As we saw in literature earlier, Design Capabilities gives attention to individual agency, calls for respect for local knowledge and priorities, and offers a guide as how local communities can be involved in social transformations.



Like capabilities in general, Design Capabilities are subjectively valued; the framing and prioritization of different design capabilities reflect local context. Individuals can choose how they grow as designers. Some emphasize the mindset of empathy as a deep understanding of other peoples’ situations (without forcing a design cycle or solution): Andryan explored the community bulletin board, understanding the physical mobility limits of her intended user group. Others valued their agency, and developed it through rapid, rough making and prototyping, to develop their ideas to share with others and promote change they want to see. For example, Kiall made and advanced his meal prototype, for example. And “We achieved our goals” noted Phil in the video he helped make (Miller 2018). They delivered convenient foods at a fair price with less hassle that taste good and are healthy!

DC demonstrated how participants reshaped the problem they were addressing. Cultivating design capabilities more widely will help people be constructive agents in understanding their lives and designing solutions to cross-cutting societal problems –i.e., to function as changemakers. These included problems in their own lives. While most are working in restaurant kitchens, food preparation, catering, and related food service occupations, some made choices to go in other directions, supported by what they learned from the Design Krewe. As active agents and changemakers—they were learning that they have a voice in identifying the problems that are worth solving, including how they spend their lives.

These disadvantaged young people find ways to re-define the agenda. Many problems and agendas are set by outside experts, high-level leaders, foreign aid agencies, based on technical evidence and /or donor agendas. Design experts are often harnessed to that apparatus, such as when pulled in to instrumental, results-oriented processes. In contrast, focusing on design capabilities will help people develop agency, set their own agenda and define the problems they deem worth solving.

Design Capabilities facilitate embodying a prototyping paradigm, with multiple ideas produced more quickly to address complex problems. This lowered the barriers to understanding the context, systems, and to generating workable solutions. It shortened the time span for learning and finding ways forward. Together with relevant technical expertise and an understanding of historical context and place, spreading these design capabilities should help any individual to take more meaningful action even on daunting societal problems.

Cultivating Design Capabilities can enable any person to cultivate their own freedoms via: expanding agency, being better able to define problems they consider worth solving, learning to live with lack of

information—in other words, to be active agents in shaping their future, even in the midst of great uncertainty. This approach can help educators go beyond teaching design as technical method (in a cookie-cutter “DT process” to planting and nurturing the seeds of agency, imagination, and “radical collaboration”).

7. Conclusion

In this paper I sketch out “Design Capabilities” for social innovation in an era of “everyone a changemaker”. The notion of “everyone a changemaker” represents a new wave of social innovation, with everyone working to be part of positive social change in some way. We actually need to help all people be these changemakers—to better able to grapple constructively, collaboratively with the huge challenges we face. The Design Capabilities concept builds on the Capabilities Approach (CA) to advance human well-being that has influenced global development and assessment of social policies around the world since 1990 with alternative “evaluative space” for social arrangements. These capture a range of freedoms to promote well-being and create a life that one “has reason to value”. I identified how characteristic mindsets of designing are infused throughout the Capabilities Approach, specifically agency and the ten central capabilities of Nussbaum as a launching point. Future work can expand this application to other capability sets as well as collective capabilities.

By way of illustration, I shared the case of a fresh food project, the Design Krewe, in New Orleans. The activities and comments of the young people involved in it illustrated the value to them of learning to design with a human-centered approach, while seeking to address real issues of food. The project can be seen to expand their agency, imagination, empathy, affiliation, and practical reasoning through design mindsets. They also found fresh food ideas that promote dignity for their senior citizens, that taste good, and reflect a local solution. So, we can see both an intrinsic value to their well-being, as well as instrumental value for the external challenge, that were mutually reinforcing.

Design is widely appreciated as helping solve wicked problems. With this project I hope to help unpack and remix those notions to support further research, education, and practice. Design Capabilities approach offers a way to imagine, make real, and assess relevant actions to cultivate changemakers who can build a better future. It supports a more normative approach to designing and design education. We should (in terms of human well-being) and need to (to address the problems we face) cultivate Design Capabilities as part of our social innovation and changemaker education for diverse learners of any age. From a social justice perspective, we ought to do more to reach marginal and subaltern people often left out of existing societal designs of structures, institutions and systems, like the young people in the Design Krewe.

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