Grounding and Developing the Design Perspective on Entrepreneurship: From Individual-Opportunity Nexus to Artifact-Centered Triad

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Grounding and Developing the Design Perspective on Entrepreneurship: From Individual–Opportunity Nexus to Artifact-Centered Triad

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Abstract

To enhance managerial relevance, entrepreneurship theory should be anchored in frameworks that are both practically useful and conceptually coherent. This essay develops a triadic design perspective on entrepreneurship that incorporates artifacts alongside individuals and environmental circumstances. Building on concepts of epistemic objects (Knorr Cetina), reflective design practice (Schön), and world disclosing (Spinosa et al.), opportunities are conceptualized as actively framed situations, within which ventures are designed, through the use of more or less concrete entrepreneurial artifacts. This resulting account of entrepreneurship as an artifact-centered and potentially transformative process of design will hopefully offer a robust foundation for advancing entrepreneurship research and practice.

Keywords

entrepreneurship, change/transformation, process thinking

Introduction

To speak of design is to recognize artifacts as human-made things, brought about through purposeful activity, with their usefulness ultimately determined by the environment in which they perform. Entrepreneurial practice brims with artifacts. The new ventures themselves[1] are artifacts, as are the more concrete and specific things entrepreneurs employ when the ventures are designed, such as business plans, pitches, minimum viable products, landing pages, and business model canvases (Blank, 2004; Gruber & Tal, 2024; McGrath & MacMillan, 1995; Ries, 2011). Increasingly, entrepreneurship scholars view ventures as developing iteratively as entrepreneurs work with such conceptual, material, and narrative artifacts (Berglund & Glaser, 2022; Camuffo et al., 2020). At the same time, artifacts are conspicuously absent from the field's core conceptual framework—the individual–opportunity nexus. Unsurprisingly, concerns about its viability have begun to bubble up.

The "dual nexus" framework of entrepreneurship is firmly grounded in economic theories of the entrepreneurial function (e.g., Hayek, 1945; Kirzner, 1973) and has inherited this tradition's basic conceptual elements, namely individuals (entrepreneurs) and opportunities, defined as environmental circumstances that can be exploited to lucrative ends (Ramoglou & Tsang, 2016; Shane & Venkataraman, 2000; Venkataraman, 1997; cf. Davidsson, 2015 for a review). While individuals have a clear role to play in a theory of entrepreneurship, the notion of opportunity has been stretched to its limits, assuming multiple, often conflicting, meanings that lead to conceptual confusion. The term has been variously used to designate objectively existing lucrative market conditions (Alvarez & Barney, 2007; Shane & Venkataraman, 2000), subjectively imagined outcomes (Klein, 2008) as well as the products, services, and other artifacts created throughout the entrepreneurial process (Arikan et al., 2020).

Such incommensurable uses of the term have prompted attempts to fortify the framework by nuancing our understanding of the "nonactor nexus component" (Davidsson, 2015, p. 675). One approach has been to speak of "possible world-states" (Ramoglou & McMullen, 2024, p. 11), which successful entrepreneurs "actualize" as "midwives of the

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possible" (Ramoglou & McMullen, 2024, p. 14). Another approach has been to speak of external enablers, which consist of things such as "technologies, regulatory changes, demographic trends, and changes to the sociocultural, macroeconomic, political, and natural environments" (Davidsson et al., 2020, p. 312).[2] Yet, these efforts remain hostage to the "dual nexus" image in that the thing being actualized or enabled is not conceptualized. Specifically, the artifacts around which the concrete practice of venturing revolves—pitches, prototypes, products, services, business models, organizations, and so on—simply cannot be accommodated within the framework.[3]

Given the undeniable need to include artifacts in the conceptual core of entrepreneurship theory, this is an opportune moment for conceptual reengineering. Extending existing work that conceptualizes entrepreneurship as design (e.g., Berglund et al., 2020), this essay reflects on our field's conceptual grounding and aims to explore more appropriate and secure foundations. One urgent task is to clearly distinguish between the circumstances in which entrepreneurs find themselves and that which they design, while recognizing that in practice, these elements are often hard to tease apart. This is the crucial distinction that the dual nexus framework has been unable to make, and the reason why the concept of "opportunity"—as used within this framework—has led to so much confusion. A closely related task concerns clarifying the ontological status (what it is?) of "that which entrepreneurs design." Clearly, *it* does not have a simple referent in the world since *it* is manifested in various concrete artifacts such as ideas, pitches, plans, prototypes, products, business models, organizations, and so on that are produced for *its* sake and that play various roles throughout the entrepreneurial process of designing *it*. Nevertheless, we need to acknowledge, conceptualize, and ontologically commit to *it*, even if *it* does not have a clear, singular form at any given moment, for without *it* our theories would have no traction with the reality they wish to portray and support (Quine, 1948).

To accomplish this and thereby meta-theoretically ground the design perspective, this essay integrates new strands of thought to elaborate the meaning of and relationships between the elements of its core conceptual triad of individuals, artifacts, and environments (Berglund, 2021; Berglund et al., 2020). The article is organized as follows. We start by outlining the design perspective and the nature of artifacts. Notably, we distinguish between two broad kinds of artifacts—opportunity as an actively framed situation, and venture as that which entrepreneurs design—that are conceptually distinct from individuals and environments and which thus underpin the third element of the triad. Thereafter, we introduce the ideas that we seek to integrate. Knorr Cetina's (2001) concept of epistemic objects illustrated how the artifacts, such as minimum viable product (MVP)s, are defined by their incompleteness and ability to generate questions and practical engagements that move the process forward. Schön's (1987) work on design practice highlighted how entrepreneurs, like designers, engage in reflective conversations with the materials and situations they encounter, continuously reframing them based on feedback received. Finally, Spinosa et al.'s (1997) notion of "world-disclosing" entrepreneurship showed how entrepreneurs, through practical engagement with artifacts and situations, not merely solve local problems but introduce new ways of understanding and interacting with the world.

Building on the foundation laid by these antidualist and practice-oriented scholars, we discuss promising aspects of the design perspective as an overarching research program: tradeoffs between simplicity and accuracy in theorizing, the difference between first and third person perspectives on entrepreneurial action, and the prescriptive potential of a nuanced design perspective focused on concrete artifact-centered practices rather than abstract economic concepts.

The Design Perspective

In contrast to the economics-inspired dual nexus framework of enterprising individuals and environmental circumstances, the design perspective offers a triadic framework comprising individuals, the artifacts they design, and the surrounding environment in which this takes place (Berglund et al., 2020; Berglund & Dimov, 2023; cf. Hilpinen, 1993; Simon, 1996; Verbeek, 2005). This perspective has been gaining traction in recent years, as evidenced by the recently launched Journal of Business Venturing Design (Berglund, 2021). Broadly speaking, the design perspective recognizes that whatever we choose call them, the things entrepreneurs design must be artificial, that is, purposefully created[4] and made to fit environmental circumstances (Berglund et al., 2020; Dimov, 2020; cf. Simon, 1996). Artifact is of course a very inclusive concept that can include events and concepts as well as more concrete things like tools and machines, as long as they are intentionally made (Hilpinen, 1993; Reicher, 2022). Because of this, and given the conceptual confusion regarding the opportunity concept, we want to make sure our terminology is clear. We therefore distinguish between opportunities and ventures. Fundamentally, these are not different in the sense that neither exists naturally in the world but are human constructions and thus artificial. We will consequently use venture to describe the thing an entrepreneur actively designs and reserve opportunity for the broader situation—as framed by an entrepreneur—within which this takes place. In the design perspective, an opportunity is thus an actively framed situation within which an entrepreneur sees the possibility to create a successful venture, whereas the actual entrepreneurial work is focused on designing such a venture.

This close relation between opportunity and situation echoes Shane and Venkataraman's well-known definition of

opportunities as "those situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at greater than their cost of production" (2000, p. 220). However, where these authors were explicit that opportunities thus defined are "objective phenomena that are not known to all parties at all times" (Shane and Venkataraman, 2000), we will argue that such situations are actively framed by entrepreneurs based on their knowledge, experience, interests, networks, and so on (cf. Dewey, 1938; Goffman, 1974; Schön, 1992). To illustrate this point, consider founder Mike Padnos as quoted in Shane (2000, p. 456): "You had to know something about why people take photographs to see the opportunity to use this technology to convert photographs to sculptures." Shane infers from this and similar quotes that profit opportunities exists objectively in the world but can only be discovered by individuals who possess the right "prior knowledge." Given the constraints of the dual nexus, this is an understandable way of describing the situation. However, the opportunity as described clearly does not spring fully formed from an external environment containing three-dimensional-printing patents nor does it reside within the mind of founder Mike Padnos. Rather, the opportunity is an artifact—an actively framed situation that includes three-dimensional-printing patents, sculptures, people taking photographs, gift giving, and so on—within which a particular individual believes a successful venture may be designed.

While opportunity thus alerts us to the fact that an entrepreneur believes that circumstances are such that they can design a successful venture, it is the specific venture and its associated elements that the entrepreneur actually designs and aims to make work. This interpretation also aligns with practical entrepreneurial discourse, where entrepreneurs commonly refer to opportunities as something they see in new technologies, demographic shifts, regulatory changes, and other environmental circumstances (cf. Drucker, 1985). With the addition of artifacts—opportunity as actively framed situation, and venture as what is designed—as distinct from both individuals and environments, we can now transform the field's conceptual foundations from a flimsy nexus into a solid triad.

Underpinning the triadic framework of the design perspective is Herbert Simon's pioneering work on the *Sciences of the Artificial* (1996). Here, design is explicitly defined in terms of "a relation among three terms: the purpose or goal, the character of the artifact, the environment in which the artifact performs" (Simon, 1996, p. 5). Echoing our inclusive view of artifacts, Simon applied this general idea to artifacts ranging from cities and organizations to buildings and technologies and famously illustrates it with the first maritime chronometer (artifact), which used counter-oscillating weighted beams connected by springs (internal character of the artifact) to enable timekeeping on rolling ships (outer environment). In contrast, traditional pendulum clocks and sundials are not clocks *qua* functional artifacts when placed in this environment. Writes Simon (2005), "whether a clock will in fact tell time depends on its internal construction and where it is placed" (p. 113). Analogously, a science of entrepreneurial design should not merely describe the essential character of inner systems (e.g., a venture's resources), outer systems (e.g., external enablers), or the purposes of designers (e.g., entrepreneurial intentions) in isolation but should ultimately be concerned with "how to make artifacts that have desired properties and how to design" (Simon, 1996, p. 111). A central part of this consists of understanding design in terms of engagement with sketches and other intermediate artifacts that represent aspects of the emerging design as understood within the overall design situation (cf. Schön, 1992). Simon (1996) again, "the representation of space and of things in space will necessarily be a central topic in a science of design" (p. 133).

In the case of entrepreneurship as a form of management, it makes a lot of sense to pay close attention to such intermediate artifacts and how they are used throughout the venture development process. Termed "entrepreneurial artifacts" (Berglund & Glaser, 2022), such representations instantiate parts of the emerging venture and have been categorized along a spectrum ranging from conceptual artifacts, such as business models and venture concepts (Felin & Zenger, 2009; Nair et al., 2022; Vogel, 2017), to material artifacts (including physical and digital), such as product prototypes, MVPs, and landing pages (Berglund & Glaser, 2022), and narrative artifacts, including business plans and pitches (Lounsbury & Glynn, 2001). In this essay, we do not focus directly on artifact typologies or modes of entrepreneurial design. Instead, we explore ways of meta-theoretically grounding and relating the design perspective's triadic framework of individuals, artifacts, and environments. By elaborating Simon's triadic conceptual framework in this way, we hope to facilitate new theory and research that specifically addresses open-ended, uncertain, and often transformative design processes, such as those undertaken by entrepreneurs. As mentioned, we also distinguish between opportunities and ventures, recognizing that both are artificial. We use opportunities when speaking of situations framed by entrepreneurs as having value creating potential and venture when referring to that which entrepreneurs design in pursuit of said opportunity.

Next, we introduce the scholars we use to sketch our alternative account of how artifacts mediate the creative interplay between inquiring humans and the worlds they inhabit. Specifically, we will discuss the works of Knorr Cetina, Schön, and Spinosa et al. who have things to say about why it is productive to conceptualize entrepreneurial practices as situated, artifact centered, and world disclosing, respectively. These scholars use concepts such as "object," "situation," and "world" that are grounded in the works of Heidegger and Dewey who both stress the primacy of situated practice over conceptual reflection when seeking to

explain the intelligence and intelligibility of human life[5] (Dewey, 1938; Heidegger, 1962). Both Heidegger and Dewey described a general mode of being, learning, and acting that prioritizes practices over essences, holism over reductionism, and see engagement with a world of artifacts and other individuals as central to understanding change and development.

Heidegger rejected the ontological dualism of minds existing separately from the world and the things it contains, suggesting instead that we "always already" exist in an inescapable and very practical unity with our worlds, which comprise an intricate web of people, things, practices, and purposes. For Heidegger, being in the world is the ontological primitive (Dreyfus, 1991) and any entrepreneurial activity thus starts from this inescapable embeddedness (Berglund, 2015). To understand the meaning of a particular thing—whether a natural object or a man-made artifact—therefore entails understanding it as a kind of equipment that must be related to a complex world of practices, people, other things, and so on. The meaning of something thus depends on the "referential totality within which the equipment is encountered" (Heidegger, 1962, p. 70) rather than on an individual's mind or something inherent in the thing itself. When entrepreneurs speak of "building ventures," this must be understood within a referential totality that gives meaning to individual activities such as preparing a presentation, talking to a customer, or building a prototype. Heidegger's work provides a holistic and practice-centered understanding of how we understand and engage with things and artifacts and how such engagement has the potential to transform the "worlds"—the interrelated webs of meanings and practices—in which we and others exist. These themes are picked up mainly by Knorr Cetina and Spinosa et al.

Similarly, Dewey explored how our understanding of things and artifacts is deeply connected to our overall experience and practical engagement with the world.[6] Dewey's focus on "inquiry" as our way of engaging and improving "situations" places more emphasis on practical than on existential description. Situation here "stands for something inclusive of a large number of diverse elements existing across wide areas of space and long periods of time, but which, nevertheless, have their own unity" (Dewey & Bentley, 1949, p. 315). Inquiry thus provides a natural focal point in a world, which is otherwise an overwhelming, amorphous whole.[7] In rejecting a dualism of logic and method, Dewey argued that inquiry can generate its own logical standards subject to the condition that they generate fruitful consequences with respect to further inquiry. In this regard, concepts, artifacts, and specific methods become meaningful and valid within the entire system of postulates that underpins the inquiry. Inquiry essentially involves the making of new worlds by deploying different sense-making categories (Goodman, 1978). To think of the entrepreneur as designer is to recognize that they do not take the world as it is but seek to change it, focusing on the world as it ought to be, yielding to certain purposes. As such, the entrepreneur is an inquirer, asking questions of the world. This more prescriptive account of inquiry is primarily picked up by Schön.

Epistemic Objects, Design Practices, and World Disclosing

In order to draw out more concrete implications for entrepreneurship as a form of artifact centered design, we will discuss entrepreneurship through the lenses of three authors who are firmly grounded in such practical and holistic modes of analysis but emphasize different elements of the design triad in their analyses: Knorr Cetina extends Heidegger to elaborate the unique character of "epistemic objects"; Schön builds on Dewey to reflect on individuals' engagement with the situations of design practices; and Spinosa, Flores, and Dreyfus combine Heideggerian analyses with hints of Deweyan pragmatism to describe the world's character and how it may be transformed.

Karin Knorr Cetina and Entrepreneurial Artifacts as Epistemic Objects

Knorr Cetina (2005) suggested that "knowledge-creating and validating or 'epistemic' practice" (Knorr Cetina, 2001, p. 185) is becoming increasingly common in modern society, with science and perhaps also entrepreneurship as paradigmatic examples. Such practices, she argues, entail a mode of engagement with artifacts that does not sit entirely well with Heidegger's distinction between the ready to hand and the present at hand.[8] Both science and entrepreneurship rely extensively on present-at-hand style analysis and theoretical thematization but also involve a form of absorbed and intuitive engagement that is closer to the ready to hand. To resolve the situation, she describes the "epistemic objects" at the center of knowledge work, that is, the focal points of investigation, as having characteristics that transcend Heidegger's categories. Drawing primarily on detailed ethnographies of scientists and bankers, Knorr Cetina shows that epistemic objects—when absorbedly and intensely engaged as part of epistemic practices—do not recede into the background but are instead brought to the fore.

To develop her argument, she describes the ontological status of epistemic objects as unfolding, dispersed, and question generating. These notions help us appreciate that what entrepreneurs are ultimately concerned with are future things, that is, things that do not yet exist outside of the imagination, yet are things that they can describe and that can affect how entrepreneurs think and act. First and foremost, they are unfolding in the sense that they are essentially

characterized by their lack of stability and incompleteness of being; they are not fixed but in the process of being defined. One can think here of a "minimum viable product," a prototype, or some similar intermediate entrepreneurial artifact whose function is to elicit feedback and engagement that may help gradually refine it (Berglund et al., 2020; Garud et al., 2008).

Second, epistemic objects are dispersed in the sense that they can exist simultaneously in a variety of forms. In this sense, opportunities and especially ventures—as that which entrepreneurs design—can be understood as epistemic objects that are dispersed by dint of having multiple instantiations such as visions, business plans, pitches, simulations, prototypes, MVPs, and so forth. Such instantiations are always partial in the sense of not comprising the venture as a whole. However, and this is critical, these various instantiations are all there is. There is no more "real thing" that one may find by reaching beyond such manifestations. It is the epistemic object itself that unfolds through the various developments made possible by engaging with the representations comprising it.

Finally, epistemic objects are question generating in that their very incompleteness, in more or less subtle ways, indicates that something is lacking and suggests what ought to be done next. To illustrate, launching an MVP to a set of users will quickly identify contexts where it is insufficient and where it works ok, thus suggesting what activities ought to be undertaken, whether in terms of developing additional features, redefining the user segment, or something else.

In sum, this discussion of epistemic objects suggests a conception of ventures and entrepreneurial artifacts as inescapably entwined with and evolving through entrepreneurship as a process of inquiry. This account thus sits very well with the view of entrepreneurship as an artifact mediated and very concrete practice of moving from something relatively simple and inarticulate to something more complex and intricate. In the words of Knorr Cetina: "Objects of knowledge are characteristically open, question-generating and complex. They are processes and projections rather than definitive things. Observation and inquiry reveal them by increasing rather than reducing their complexity" (2005, p. 190).

Donald Schön and the Entrepreneur as Designer

Schön (1987) used Dewey's (1938) inquirer as the template for his reflective practitioner as designer, that is, someone who converts indeterminate situations into determinate ones. Schön uses the term "situation" in the sense explicitly clarified by Dewey, namely "something inclusive of a large number of diverse elements existing across wide areas of space and long periods of time, but which, nevertheless, have their own unity" (Dewey & Bentley, 1949, p. 315). In turn, building on Goodman's (1978) notion of "worldmaking" through selective perception, (re-)organization, and labeling of elements and relationships at hand, Schön depicts designers as framing their own "design worlds" within which they function, having determined "what is there" for design purposes (Schön, 1992).

In this process, designers reflect in action, whereby they "converse" with a situation in terms of "what if?" scenarios and acknowledge that commitments have binding implications for further moves. In this sense, the inquiry is an evolving system of implications within which the designer reasons (reflects in action). The designer evaluates each move in a threefold way: (1) in terms of the desirability of their consequences, (2) in terms of their conformity to or violation of implications set up by earlier moves, and (3) in terms of the new problems or potentials they have created. Schön articulates a view of practice as a worldmaking activity, defined by the projections one makes onto the situations one faces in order to make them more determinate:

> A constructionist view of a profession leads us to see its practitioners as worldmakers whose armamentarium gives them frames with which to envisage coherence and tools with which to impose their images on situations of their practice. A professional practitioner is, in this view, like an artist, a maker of things. (Schön, 1987, p. 218)

Within the design literature, Dewey's indeterminate situations are conceptualized as design or ill-defined (wicked) problems that need to be framed, that is, defined in a particular way in order to proceed with their solution (Dorst, 2011; Glaser & Lounsbury, 2021). In this regard, a frame represents an organizing principle or a coherent set of statements that make the problem situation meaningful and thereby enable one to reason about the problem. Framing is thus a crucial aspect of design activity.

This line of thought has entered the entrepreneurship literature in the development of design science of entrepreneurship (Berglund, 2021; Dimov, 2016). Key to it is the acknowledgement of the entrepreneur as existing and acting in a perpetual present, a junction between past and future. The past represents what has already happened and thus what can be taken for granted as elements to be interpreted and reflected upon for the purpose of engaging with the future. The future holds the imagined and unknown implications of moves or commitments yet to be made. In this regard, in their future orientation, the entrepreneur is a designer operating within a frame constructed for the purpose of turning their indeterminate situation into a determinate one, defining an opportunity within which a venture may be created. Opportunity can thus be seen as the frame or "situation," inside which a specific venture is designed by means of more or less concrete "entrepreneurial artifacts" (Berglund & Glaser, 2022), that in turn can inform actions

and reevaluate moves in the manner that Schön advocates. In this regard, each action—by virtue of its consequences, whether "good" or "bad," expected or surprising—generates information about (1) the situation, (2) suitability of the action, and (3) suitability of the framing (Argyris et al., 1985). In receiving negative feedback on a product prototype, an entrepreneur can reflect on whether the right respondents were engaged, on whether the product was presented properly or on whether the product vision and business model as a whole makes sense. The frame—as the sense of what the venture is about (Mansoori & Dimov, 2024)—enables entrepreneurs to act as if certain premises are true (Gartner et al., 1992) and thereby opens pathways to a new world to be ushered in through the implications of the entrepreneur's actions.

Spinosa, Flores, and Dreyfus and Entrepreneurs as Disclosing New Worlds

As inquirers, entrepreneurs often do more than introduce new products and practices into the world; they change the world's meaning and significance. Building on Heidegger, Spinosa et al. (1997) referred to this as world disclosing. They posit that all pragmatic activity is organized by an underlying style, which captures and gives meaning to the way things, identities, and so on fit together within practices (cf. Heidegger's notions of "world" or "referential totality," and Dewey's "situation"). As a shared holistic background that provides conditions for intelligibility, a style also helps coordinate actions, determine how people and things matter, and connect different situations to each other.

Importantly for our purposes, being intimately attuned to and involved in a style also enables "world-disclosing" entrepreneurship, whereby individuals transform styles—or disclose new worlds—by engaging deeply and practically with sensed incongruities between an existing style and particular things or practices. In our everyday habitual experience of the world, we all experience tensions or incongruities that we normally tend to overlook. However, world-disclosing entrepreneurs (as opposed to passive arbitrageurs or assertive visionaries) instead stay with these tensions and also engage others in concrete and collective processes of engagement, where disharmonies are concretely embodied in various artifacts and enacted together with others such that the meaning and significance of the world is revealed in new light. Foreshadowing the idea of optimal distinctiveness in cultural entrepreneurship (Lounsbury & Glynn, 2001), an entrepreneur "should try to realize his innovative thinking in such a way as to maximize both its sensibleness and its oddness" (Spinosa et al., 1995, p. 17).

This can be done in three main ways. By engaging in articulation, entrepreneurs operate as poets of sorts who bring the meaning and significance of the changing world into sharper focus through artifacts and related practices that help make the implicitly felt more explicit. When engaging in reconfiguration, entrepreneurs do not articulate central tendencies of an evolving style but instead seek to bring some of its marginal aspects to bear on the center. By engaging in cross-appropriation, entrepreneurs import, or exapt, more directly useful practices that have developed in other local settings, thereby helping to transforming the present one. To illustrate, Spinosa et al. described King Gillette's entrepreneurial journey. First, they dismiss traditional accounts of how Gillette "ever since a conversation with the inventor of pop bottle caps … had been looking for a product that people could throw away and reorder" and how "the idea for the safety razor hit [him] when he started shaving and found his razor dull" (Vesper, 1990, p. 139). Such stories, claim the authors, are too ahistorical and lack the emotive intensity and cultural context needed to make sense of Gillette's entrepreneurial commitment. At the time, shaving with straight steel razors carried deep cultural meanings, so surely something like disposable pens would have been an easier product to pursue. Instead, the authors suggest that meaning and significance of shaving in the modern world were central to what happened:

> Gillette sensed that he and other men were willing to give up their masculine rituals not only for the sake of convenience in the domain of removing facial hair but also for the sake of having a different relation to things in general. Gillette sensed that masculinity could—and would, thanks in part to him—be understood as commanding things and getting rid of them when they ceased to serve rather than as caring for and cherishing useful and well-engineered things. Gillette's entrepreneurial conviction did not rest on a skillful balancing of technical know-how and needs; he sensed the dullness of the blade *as unusual, as something to be changed in the way he dealt with things generally*. The entrepreneurial question for Gillette was not whether people would like disposable razors, nor was it whether disposable razors could be produced. The entrepreneurial question was, What did his annoyance at the dullness mean? Did it mean that he just wanted a better-crafted straight-edge razor that kept its edge longer? Or did he want a new way of dealing with things? (Spinosa et al., 1997, p. 42)

The notion of disclosing new worlds resonates with Dewey and Goodman's ideas of inquiry as the making of new worlds via the framing force that the inquirer exerts in giving the circumstances in which they find themselves a new meaning. More broadly, Goodman (1978) emphasized that worlds are made of other worlds: "worldmaking as we know it always starts from worlds already in hand; the making is a remaking" (p. 6). Like Spinosa et al. and echoing the notion of bricolage (cf. Baker & Nelson, 2005), he outlines some heuristics for such remaking. Through composition and decomposition, we take things apart, combine features, make connections, and put things

together. Through weighting, we sort component elements differently into relevant and irrelevant. Through ordering, we change the basis through which component elements are derived. Through deletion and supplementation, we remove old material and include some new material. Finally, through deformation, we reshape elements to smoothen or distort our perceptions. In sum, we gain knowledge of the worlds in which we find ourselves not only through exploration and analysis, but, more significantly, also by transformatively disclosing new ones (cf. Berglund et al., 2020, p. 835).

Taken together, these authors help us see entrepreneurship not as the mere alignment of individuals with environmental circumstances but as a process of inquiry shaped by ongoing and active engagement with both abstractly envisioned opportunities and their concrete manifestations. Through Knorr Cetina's lens, the venture entrepreneurs design can be understood as epistemic objects, gradually unfolding and expanding in complexity through engagement with various entrepreneurial artifacts. Schön's emphasis on design practice casts the entrepreneur as a reflective practitioner, where opportunities are the situations within which ventures—developed through concrete entrepreneurial artifacts—are iteratively crafted, thereby moving opportunities from indeterminate to gradually more stable. Finally, Spinosa, Flores, and Dreyfus' notion of world-disclosing entrepreneurship emphasizes that entrepreneurs do more than respond to existing conditions; by concretizing and engaging with the incongruities felt in problematic situations, they have the potential to disclose new worlds, thereby not only creating new ventures but transforming the environment and its meaning in the process.

Discussion

Recognizing that theories of entrepreneurship must jointly consider individuals and environmental circumstances, the individual–opportunity nexus marked a significant advance that helped our field lay a foundation for entrepreneurship as a distinct domain of scholarly inquiry. Such evolution is natural and necessary, as academic disciplines seek to enter new domains and secure new and stronger scientific underpinnings. Still, in the words of Peirce, science is never "standing upon the bedrock of fact. It is walking upon a bog, and we can only say, this ground seems to hold for the present. Here I will stay till it begins to give way" (Peirce, 1934, 5.589, page 412 in the 1974 edition).

Well, the ground under the dual nexus framework is clearly giving way. In this essay, we have therefore sought to place the emerging design perspective and its triadic framework of individuals, artifacts, and environments on a new conceptual footing. The economics-inspired dual nexus framework downplays the role of artifacts and their essential role in iterative and potentially transformative entrepreneurial practices, in favor of a conceptual apparatus that sees entrepreneurial outcomes as the combined effects of enterprising individuals and favorable circumstances (e.g., Shane & Venkataraman, 2000). In order to provide conceptual space for entrepreneurial artifacts, we instead took as point of departure the practice-centered and antidualistic philosophies of Heidegger and Dewey. These authors, and the traditions to which they belong, point to several conceptual limitations of overly reductionist and transcendental notions of practice. Of special relevance for our purposes, they also see the fundamental entwinement of individuals, artifacts, and environmental circumstances as essential both for theoretical understanding of and practical engagement in transformational practices. To relate this perspective more closely to entrepreneurship and the elements of the design triad, we specifically discussed Knorr Cetina's notion of epistemic objects, Schön's depiction of design practice, and Spinosa et al.'s account of world disclosing.

Our ambition has been to breathe new life into the concept of opportunity. Conceptualized as artifacts, opportunities can be reinterpreted as situations actively framed by individuals, in light of their environmental circumstances; a situation is thus an artifact by virtue of the imposition of meaning on environmental circumstances. As such, opportunities provide the frames within which venture development takes place. The venture, as that which entrepreneurs design, is then instantiated and developed through a number of more or less concrete entrepreneurial artifacts (Berglund & Glaser, 2022), which are used to articulate visions, support interactions, and more generally facilitate inquiry into the world and act as gateways to its potential transformation. As such, opportunity is most meaningfully understood as the actively framed situation within which venture development takes place, entrepreneurial aims are articulated, and entrepreneurial actions and artifacts receive their meaning (Dimov, 2021). To say that an entrepreneur is pursuing an opportunity is akin to saying that an ambitious professional is pursuing a career or that a travel lover is planning a holiday. In this sense, the notions of "opportunity," "career," and "holiday" are defining frames for these respective inquiries as future-oriented activities. Thus, to speak of Mary's opportunity, Jim's career and Martha's holiday in a future-oriented sense are to acknowledge implicitly their function as signifiers for how Mary, Jim, and Martha see and aspire for the future, and thus as frames or situations within which they engage with the world in the here and now.

Moving to ventures as the things which entrepreneurs actively design, the fact that this takes place over time means that the realm of venture is time extended. In logical terms, we can say that the term "venture" functions as a variable (Quine, 1939)—an analogue to a pronoun ("that which")—with the more concrete artifacts of entrepreneurial practice functioning as its manifestations in the time-

extended realm. To say, "there is a venture" is to say that someone is engaged in a future-oriented activity. Thus, "venture," just like *x*, is an inherently ambiguous name for what the activity is about, ever reformed. This fact, that as artifacts, neither venture nor opportunity has a fixed referent in either individual minds or environmental circumstances, explains why these concepts have sat uneasily within the dual nexus framework. Rather than jettison them and thereby sever connections to entrepreneurial practice, we have sought to provide new foundations.

It is by thinking of opportunities as actively framed situations, and of ventures as variables—evolving artifacts that delineate an otherwise amorphous expanse of pitches, prototypes, business models, and other concrete entrepreneurial artifacts as the range of its manifestations—that we can speak coherently about that which entrepreneurs design throughout the entrepreneurial journey. Without these conceptual anchors, the landscape of entrepreneurship would remain undefined, a mere aggregation of disparate elements. Recognizing opportunities as situations and ventures as variables associated with a range of entrepreneurial artifacts allows for meaningful understanding and structured exploration of the entrepreneurial process. This not only enriches our understanding of entrepreneurship but also reaffirms the concept of opportunity as essential, not despite but because of its artificial nature, for understanding entrepreneurship as a situated and future-oriented activity of venture design. Our analysis and grounding of how individuals, artifacts (i.e., opportunities, ventures, and entrepreneurial artifacts), and environmental circumstances relate, give rise to several implications for further theory and research.

Tradeoffs Between Simplicity and Accuracy: The Limitations and Potential of Economics for Entrepreneurship Studies

Most economists of entrepreneurship (Knight, Schumpeter, Mises, Kirzner, Baumol, etc.) regard innovative and transformative entrepreneurship both as an (and perhaps the) essential economic function and as an element of human action that is so subjective and idiosyncratic to the particular individual that it cannot be meaningfully explained or modeled. Knight thus emphasized "the emphatic contrast between knowledge as the scientist and the logician of science uses the term and the convictions or opinions upon which conduct is based outside of laboratory experiments" (Knight, 1921, p. 231), with von Mises (1949) claiming that

> the ultimate ends of human action are not open to examination from any absolute standard. Ultimate ends are ultimately given, they are purely subjective, they differ with various people and with the same people at various moments in their live. (p. 95)

Instead of trying to explain or describe the process of entrepreneurial action in any detail, economists and management scholars inspired by them therefore tend to adopt very abstract definitions and instead focus on implications for social and organizational governance. Trading off descriptive detail for conceptual simplicity in this way is of course perfectly fine, given the knowledge interests at hand. To assume that societies contain a given amount of innovative entrepreneurial effort can be useful when reflecting on how institutions allocate the productivity with which it is expended (Baumol, 1990).

However, using abstract accounts of entrepreneurship to develop more behaviorally oriented management theories can also lead to problems (Berglund et al., 2020; Dimov, 2011). If we are not aware of the assumptions carried over from economic into management theorizing (cf. Korsgaard et al., 2016), we risk basing entire research programs on conceptual foundations that neglect things of central managerial importance. The dual nexus tradition is greatly inspired by Austrian economics, especially via Kirzner Mark I (Korsgaard et al., 2016). Here, opportunities are defined as having agent-independent existence in the form of lucrative environmental circumstances (Shane & Venkataraman, 2000). Entrepreneurship is then defined as discovery and exploitation of such opportunities, which occurs when individuals either (1) actively position themselves in information flows that may serendipitously reveal opportunities (Kaish & Gilad, 1991), (2) happen to possess knowledge that reveals the opportunity inherent in new information (Shane, 2000), or (3) systematically search for opportunities in light of their prior knowledge (Fiet, 2007). The details of entrepreneurial practice—that is, the actual development of a new venture with all this entails—are however black-boxed. This abstract perspective is most eloquently and consistently articulated by Ramoglou and McMullen (2024) whose notion of "entrepreneurial work" depicts entrepreneurs as "midwives of the possible" in the deterministic sense that human action contributes nothing tangible but merely ushers in something predetermined.

While searching for, or exposing oneself to, information can of course be quite valuable, the image of isolated individuals matched against situations as readymade opportunities seems at a first glance to preclude the kind of artifact-centered and world-disclosing entrepreneurship we have discussed. However, a deeper look reveals an important distinction between imperfect information (as implicated in the notion of search above) and sheer ignorance in relation to entrepreneurial discovery of an entirely new "ends-means schema." Writes Kirzner (1997), "sheer ignorance differs from imperfect information in that the discovery which reduces sheer ignorance is necessarily accompanied by the element of surprise—one had not hitherto realized one's ignorance" (p. 62). Discovery thus entails a gestalt shift whereby the entrepreneur imposes on the world a new conceptual frame, rather than revelation within such a frame.

This clearly echoes Goodman's (1978) idea of worldmaking as the deployment of a different scheme of categorization, Schön's (1987) idea of applying a different frame, and Spinosa et al.'s (1997) idea of disclosing new worlds. The new frame is not part of the environmental circumstances themselves but is invoked by the entrepreneur as designer, engaging with the world in a purposeful and often very concrete manner.

While Kirzner Mark I and those building on this edifice largely black box the discovery of new ends-means frameworks, his fellow Austrian economist Ludwig Lachmann treated expectations, plans, and resource combinations as central to understanding entrepreneurship. Lachmann rejected Kirzner's notion of alertness and instead advocated for a "subjectivism of active minds" that result in material entrepreneurial artifacts. Writes Lachmann:

> The entrepreneurial interpretation of past experience finds its most interesting manifestation in the formation of *expectations* … i.e., those acts of the entrepreneurial mind which constitute his "world," diagnose "the situation" in which action has to be taken, and logically precede the making of plans. (Lachmann, 1956, p. 15)

Entrepreneurial plans are here explicitly seen as frames within which more concrete artifacts are designed and tested in the marketplace: "Capital goods are products of the human mind, artefacts, produced in accordance with a plan. Capital gains and losses [are] effective tests of such plans" (Lachmann, 1947, p. 112).

It thus appears the design perspective is quite compatible with economic theory, despite the relatively abstract nature of the latter (cf. Packard et al., 2021). However, where the dual nexus perspective leans heavily on Kirzner Mark I and its emphasis on alert individuals and disequilibrium markets (Korsgaard et al., 2016), the design perspective would do well to align itself with the active subjectivism and artifact-centered analysis of Lachmann.

First and Third Person Perspectives on Entrepreneurship

The influence of abstract economic concepts on entrepreneurship research can be seen as special case of something more general. In turning entrepreneurship into an academic subject, scholars have typically been interested in the actual, while entrepreneurs operate in pursuit of the possible. In the words of Dewey, "'the actual' consists of given conditions; 'the possible' denotes ends or consequences not now existing but which the actual may through its use bring into existence" (1960, p. 299). In seeking firm theoretical ground, scholars have often tried to bring the messy world of artifacts and possible futures into the analytically purview of the actual. This is especially true for the notion of opportunities where many scholars seek to "extract 'opportunity-hood' or 'opportunity-ness' from the particular individuals and circumstances of entrepreneurship" (Dimov, 2020, p. 339). It is in this context that questions and discussion about ontology have arisen.

The broader point here concerns the distinction between holistic and situated first-person understanding of entrepreneurial action and atomistic and detached third-person accounts of the same (Berglund, 2007). While not engaging with the concrete reality of entrepreneurial practice, this distinction was often acknowledged by economists like Knight:

> It is only when our interest is restricted to a very narrow aspect of the behavior of an object, dependent upon its physical attributes of size, mass, strength, elasticity, or the like, that exact determination is theoretically possible … In general the future situation in relation to which we act depends upon the behavior of an indefinitely large number of objects, and is influenced by so many factors that no real effort is made to take account of them all, much less estimate and summate their separate significances. It is only in very special and crucial cases that anything like a mathematical (exhaustive and quantitative) study can be made. … There is doubtless some analysis of a crude type involved, but in the main it seems that we "infer" largely from our experience of the past as a whole. (Knight, 1921, pp. 292–293)

Echoing Heidegger's distinction between the detached and analytical present at hand and the holistic and practical ready to hand, Knight's insight reminds us that while scholar and entrepreneur may be looking at the same things, they tend to have different goals and inhabit different worlds of meaning. This is also evident in formalist and substantive conceptions of opportunities (cf. Dimov et al., 2021), where the former seeks universal and apersonal accounts and the latter recognizes in them attempts to articulate and engage a felt incongruity (e.g., Spinosa et al., 1997) so as to enable further engagement and clarification of its meaning and significance (Berglund et al., 2020; Dimov, 2011). Scholars typically impose meaning from the outside, from a third-person sense, while practicing entrepreneurs uncover meaning in a substantive, first-person sense (Dimov et al., 2020). Being aware of this distinction, scholars can of course try to describe and understand an entrepreneur's lived experience but must remain aware that "such an investigation is always in conflict with its material, which is beyond language and concept" (Schütz, 1982, p. 70, cited in Berglund, 2007).

This takes us to the question of whether something is or is not an opportunity, which is similar to asking whether what Jim pursues is a career or what Martha plans is a holiday. These questions all concern the use and justification of a conceptual schema. And as Dewey and Goodman remind us, conceptual schemas have no inherent truth value—they can only be justified through their efficacy in understanding and worldmaking. This is true both from Jim's and Martha's first-person perspectives and from the scholarly

third-person perspective. If Martha indeed finds it productive to regard her activities as holiday planning, who can say this is wrong? And if a scholar regards Jim's pursuit as a career, who is to say this cannot expand our understanding of the concept of careers. (If Karl Weick regards the Mann Gulch disaster in terms of leadership, identity, and culture, who is to say this cannot expand our understanding of these concepts?) Similarly, the notions of opportunity and venture alert us to the fact that situated individuals envision and enact futures in ways that give purpose, focus, and substance to their entrepreneurial efforts. Venture ideas are thus not true by virtue of being prophetic visions. Nor are opportunities real by virtue of being person-independent aspects of the world. Their utility lies in being useful concepts: useful both in the first-person context of entrepreneurial action and in the third-person context of scholars researching entrepreneurial action. Therefore, debates that reduce opportunities and ventures to individual visions (true of false), environmental circumstances (existing or not), or some combination of the two will miss what is central to understanding entrepreneurship as a form of design.

While these insights are theoretically valuable, the real value of the design perspective, as hinted at above, lies in its implications for entrepreneurial practice.

The Prescriptive Potential of a Nuanced Design Perspective and Suggestions for Future Research

Treating entrepreneurship as an artifact-centered process of design has important implications for entrepreneurial practice. By distinguishing that which entrepreneurs design, from the circumstances within which this takes place, we can focus our efforts in more practically relevant directions. Specifically, by highlighting the more or less concrete artifacts used throughout the process, the design perspective avoids the overly abstract and empirically inoperable opportunity concept borrowed from economics (Berglund et al., 2020; Dimov, 2011). As discussed, the dual nexus view tends to subsume opportunities under subjective visions or objective circumstances and overlook entrepreneurial artifacts such as business plans, business models, prototypes, financial simulations, products, organizations, and so on (Blank, 2017; Osterwalder & Pigneur, 2010; Savoia, 2019; cf. Berglund & Glaser, 2022). To the extent that entrepreneurship scholars aspire to understand and especially aid entrepreneurial practice, this is a rather big problem. In contrast, the design perspective defines opportunities as actively framed situations that provide the context within which ventures are conceived and designed. This is done using concrete entrepreneurial artifacts that serve to instantiate, test, and develop the venture, highlighting that these artifacts are essential not only for designing the venture but also for reconsidering the opportunity itself (cf. Spinosa et al., 1997). To realize the importance of focusing on concrete entrepreneurial artifacts, simply consider any entrepreneurial process and then try to describe its development or prescribe potential courses of action, without reference to any such artifacts (cf. Berglund et al., 2020, p. 826).

Given the prescriptive aims of the design perspective, we encourage further reflection on the ways in which opportunities and ventures, when treated as artifacts, can be theorized in relation to entrepreneurial designers and the worlds they disclose. Conceptually, future work may critique and extend existing typologies of entrepreneurial artifacts (conceptual, digital, physical, and narrative) and design principles (experimental and transformational; Berglund et al., 2020; Berglund & Glaser, 2022; Dimov, 2021). Here, inspiration may be draw from the similarly triadic account of postphenomenological philosophy of technology. This tradition has developed a rich conceptual apparatus for theorizing how artifacts can constitute, mediate, reduce, expand, and so on and the relationship between individuals and environmental circumstances (Ihde, 1995; Verbeek, 2005). Methodologically, scholars can build on general design science (Bunge, 1966; Niiniluoto, 1993; Simon, 1996) to turn descriptive insights into methodological guidelines and design theories of more immediate value to entrepreneurship scholars. These prescriptive theories should then be evaluated in terms of their practical utility (Dimov, 2016; Romme & Reymen, 2018; Seckler et al., 2021).

The design perspective would also benefit from detailed empirical investigations of entrepreneurial artifacts and the roles they play in venture design processes. Such studies can be both cross-sectional and longitudinal, though the latter may be preferable, given the temporal character of design processes. Regardless of such specific choices, empirical investigations should focus on the characteristics and affordances of various artifacts (e.g., conceptual, digital, physical, narrative, distinct, and mutable), the contexts in which they figure (e.g., individual work, internal meetings, and external stakeholder interactions), the purposes motivating their use (e.g., experimentally pursuing specific goals and stimulating transformative cocreation), how the kinds of artifacts used changes depending on venture maturity (e.g., from simple to complex and changing meanings in the process) as well as their intended and unintended consequences. While some studies have investigated the roles of specific entrepreneurial artifacts, such as business models (Doganova & Eyquem-Renault, 2009) and pitches (Lounsbury & Glynn, 2001), much will be gained by casting a wider net and in terms of the variety of artifacts used (cf. Comi & Whyte, 2018). Moreover, by conceptualizing artifacts in terms of the design perspective as elaborated here, we will be attuned to their roles as evolving entities that shape and are shaped by both individuals and environmental circumstances as part of the entrepreneurial journey.

Conclusion

Absent markets, how do new goods and services come into existence? For a long time, answers to this foundational question have been framed in terms of a dual nexus of enterprising individuals and environmental circumstances. Partly as a response to the conceptual and practical limitations of this framing of entrepreneurship (cf. Davidsson, 2015, Dimov, 2011, Foss & Klein, 2020), the design perspective proposes an extension of the dual nexus to a design triad of individuals, artifacts, and environments (Berglund et al., 2020). In this essay, we have sought to ground this perspective in the anti-dualistic and holistic philosophies of Heidegger and Dewey. Specifically, we discussed contributions by Spinosa et al., Knorr Cetina, and Schön to conceptualize entrepreneurship as the gradual disclosing of new worlds by means of evolving artifacts, which mediate and guide the encounter of individual and world by infusing it with both significance and substance. Our answer to Venkataraman's question is that new goods and services come into existence through venture design processes enacted within the frames provided by perceived opportunities. The actual process is propelled by entrepreneurial artifacts that depict or articulate an imagined future and which tend to evolve from simple and provisional forms into more detailed and enduring ones as they gradually get settled in market exchange. Such artifact-centered accounts of entrepreneurship are difficult to coherently formulate using the conceptual apparatus of the dual nexus. We hope this essay can make such accounts easier to articulate, thereby enhancing both theoretical clarity and practical implications.

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Notes

1. The things being designed by entrepreneurs has been notoriously difficult to define precisely. Gartner famously suggested that what entrepreneurs design are new organizations (Gartner & Katz, 1988), with Davidsson instead suggesting "new economic activities" (Davidsson, 2003; Wiklund et al., 2011). We will not define venture beyond suggesting that which entrepreneurs design (Berglund, 2021).
2. There is also a third suggestion, namely, to sweep all conceptual problems under the rug by treating opportunity as "an umbrella construct … that incorporates many meanings and is subject to multiple interpretations" (Wood & McKinley 2020, p. 353).
3. Here, it is worth remembering that Venkataraman's (1997) seminal text in starts by asserting that: "Our field is fundamentally concerned with understanding how, in the absence of current markets for future goods and services, these goods and services manage to come into existence" (p. 120). This question is clearly centered on the design of new artifacts. But, in the very next sentence, the concrete and managerially relevant focus is lost as Venkataraman answers his field-defining question by introducing the nexus framework: "Thus, entrepreneurship as a scholarly field seeks to understand how opportunities to bring into existence 'future' goods and services are discovered, created, and exploited, by whom, and with what consequences." (Venkataraman, 1997).
4. To be precise, naturally existing things, such as a stone picked up and used for hunting, can also become artifacts as long as they are given a purpose by an "author" (Hilpinen, 1993).
5. This is especially true of Heidegger's early work, which we refer to here. In his later writings on technology, Heidegger became quite abstract in his analyses.
6. This is especially salient in the book Experience and Nature (Dewey, 1929, pp. 122–123):

   > Objects and events figure in work not as fulfillments, realizations, but in behalf of other things of which they are means and predictive signs. A tool is a particular thing, but it is more than a particular thing, since it is a thing in which a connection, a sequential bond of nature is embodied. It possesses an objective relation as its own defining property. Its perception as well as its actual use takes the mind to other things. The spear suggests the feast not directly but through the medium of other external things, such as the game and the hunt, to which the sight of the weapon transports imagination. Man's bias towards himself easily leads him to think of a tool solely in relation to himself to his hand and eyes, but its primary relationship is toward other external things, as the hammer to the nail, and the plow to the soil.

7. This inseparability of individual purpose and the meaningfulness of situations are also echoed by Heidegger: "Far removed from any present-at-hand mixture of circumstances and accidents which we encounter, the Situation *is* only *through* resoluteness and in it" (Heidegger, 1962, p. 346).
8. Heidegger described two fundamentally different modes, whereby we relate to things, namely as ready to hand, which are practical and primordial, and the present at hand, which is detached and derivative. Things exist as ready to hand when we are engaged in familiar activities such as writing a letter, driving a car, or pouring a drink. When carrying out such activities, we typically do not think very much about the situations we are in or the discrete physical objects we use (such as pens, gear sticks, or cups). Nor are our actions guided by conscious thoughts and plans. Instead, things and plans recede into the background, as it were, and we are instead holistically aware of the situations and simply do what needs to be done in a state of absorbed coping or flow (Dreyfus, 1991). In contrast, the present-at-hand mode of being describes the way things

exist to us when this state of flow breaks down; when we, for some reason, become detached from the state of absorbed coping. When a thing stops being practically meaningful equipment bound up with a referential totality, we begin to consciously and theoretically reflect on it in terms of isolated properties, explicit functions, formal relationships, and so on. For example, when the tip of the pencil we use to write a letter breaks, we start to think about the physical properties of the wood and graphite, about whether we perhaps dropped the pencil earlier, and how much force we applied to it, all in an effort to understand what just happened. A pencil that is present at hand no longer receives its meaning implicitly and holistically as part of a meaningful practice in which we are absorbed. Instead, it is understood explicitly in terms of its size, weight, physical properties, history, price, and so on.

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