

The role of pragmatism in De-sign: persevering through paradoxes of design and semiotics

O papel do pragmatismo no De-sign: perseverar através de paradoxos de design e semiótica

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Abstract: To know anything about reality is to rely on signs, and to live life semiotically is to transform reality by engaging in design. *De-sign* is a notion coined to introduce the fusion of design and signs. In the reiterative *de-sign* process, there are no separations or absolute boundaries between thinking and doing as ways of conceiving a possible action or developing further actions. The free movement within simultaneous multiplicities, transcending the appearance of things and creatively handling a range of polarities, is inherent to design thinking and semiotic interpretation. To be involved in the *de-sign* process is to persevere through several paradoxes. Contradictory beliefs and bewildering antinomies are intrinsic to *De-sign*; they are not only acceptable, but are also welcome if we can develop the capacity to persevere through them. Paradoxes are not a result of a mistake in our reasoning, but a defect in our ability to deal with a cognitive dissonance. Through the maxim of pragmatism, our thoughts and actions can be determined, and how appropriate their consequences are can be assessed. This is where pragmatism, as the method of ascertaining the meaningfulness of *De-sign*, determines the congruency between the intention of our thoughts and the appropriateness of our actions. Since pragmatism is a method of experimentation that reveals the effectiveness of thought and action, *De-sign* demands perseverance. To persevere through the paradoxes of *De-sign* is to be at ease with what is and what might or could be, to be comfortable with ambiguity and uncertainty, and to be patient with the emergent process of that-which-is-yet-to-become, thus, sharing with the Divinity the *agapastic* act of creation.

Keywords: Ambiguity and uncertainty. Creation. *De-sign*. Design thinking. Paradoxes. Pragmatism. Semiotic interpretation. Synechism.

Resumo: *Conhecer qualquer coisa sobre a realidade é fiar-se em signos, e viver a vida semioticamente é transformar a realidade através do design. De-sign é uma noção cunhada para introduzir a fusão de design e signos. No processo reiterativo de de-sign, não há separações ou limites absolutos entre o pensar e fazer como formas de conceber uma ação possível ou desenvolver ações posteriores. O livre movimento dentro de multiplicidades*

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simultâneas, transcendendo a aparência das coisas e manipulando criativamente uma variedade de polaridades, é inerente ao design thinking e à interpretação semiótica. Envolver-se no processo de de-sign é perseverar por vários paradoxos. Crenças contraditórias e antinomias desconcertantes são intrínsecas ao De-sign; elas não são apenas aceitáveis, como também bem-vindas, se pudermos desenvolver a capacidade de perseverar através deles. Paradoxos não são resultado de um erro em nosso raciocínio, mas de um defeito na nossa capacidade de lidar com uma dissonância cognitiva. Através da máxima do pragmatismo, nossos pensamentos e ações podem ser determinados e podemos avaliar quão apropriadas são suas consequências. É aqui que o pragmatismo, como método de determinar o significado do De-sign, determina a congruência entre a intenção de nossos pensamentos e a adequação de nossas ações. Como o pragmatismo é um método de experimentação que revela a eficácia do pensamento e da ação, o De-sign exige perseverança. Perseverar nos paradoxos do De-sign é estar à vontade com o que é e o que pode ou poderia ser, estar à vontade com a ambiguidade e a incerteza e ter paciência com o processo emergente daquilo-que-ainda-está-tornando-se e, assim compartilhar com a Divindade o ato agapástico da criação.

Palavras-chave: *Ambiguidade e incerteza. Criação. De-sign. Design thinking. Interpretação semiótica. Paradoxos. Pragmatismo. Sinequismo.*

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1 Preamble: what is *De-sign*?

Understanding the role of pragmatism in *De-sign*¹ (the fusion of design and signs) is not only significant for designers and semioticians, but also offers a transdisciplinary perspective for scholars in other disciplines. But before I explore the role of pragmatism in *De-Sign*, it is important to clarify what I mean by the notion of *De-Sign* and why the axioms of design and semiotics are different from the widespread axioms of other disciplines within the established boundaries of humanities and sciences. Although such clarifications have been articulated in my recent book (see SEIF, 2019), it is necessary to briefly reintroduce them here in order to underscore the role of pragmatism in the *de-sign* process, and to make reasonable extrapolations as to why one has to persevere through the paradoxes associated with design thinking and semiotic interpretation.

The connection between design and semiotics has barely been explored in literature other than in linguistic terms. The Romanian scholar Mihai Nadin (1990)

1 I italicize the notion of “*De-sign*” to emphasize the large and inclusive scope of design as a way of thinking, a sort of cognitive activity that does not specifically refer to any design profession such as architecture, industrial design, or graphic design. And whenever I use the word *De-sign* as a modifier, I prefer the italicized lowercase “*d*”—for example: *de-sign* inquiry, *de-sign* intention, *de-sign* outcome, *de-sign* process, or *de-signer*.

showed an interest in this connection in his article *Design and Semiotics*. However, Nadin did not go far enough to integrate design thinking and semiotic interpretation, nor did he articulate explicitly how design and signs connect beyond marketing and technological purposes. Likewise, the Czech-born philosopher Vilém Flusser (1999) did not have the opportunity to go beyond the etymological roots of the word “*design*” (lowercase) due to his unexpected and tragic death in 1991.

Although semiotics has been utilized to some degree in architecture and other traditional fields of design (e.g., physical design, visual design, graphic design), the relationship between the inclusive scope of “Design” (with a capital “D”) and the wide-ranging perspective of semiotics is largely unfamiliar in most educational institutions and professional fields. Design and semiotics remain the “lonesome two” between the dominant cultures of humanities and sciences. It cannot be overemphasized that design and semiotics are two partners that do not belong to either of the dominant cultures. Therefore, it seemed reasonable not only to integrate both design and semiotics, but also to infuse them into a coherent body of work in which the search for *le mot juste* leads to the notion of *De-sign*.

2 The familiar two that separate, and the unfamiliar two that integrate

Unquestionably, the humanities and the sciences have been the two dominant intellectual cultures in the West for more than 500 years. The separation between humanities and sciences, the human sciences and the natural sciences, was unthinkable prior to that time. After the Renaissance era, however, arts and sciences gradually became two autonomous cultures; their proponents became less and less willing to speak to each other, leading to the isolation of humans from their reality and the fragmentation of knowledge. Such shallow familiarity tends to work against itself, consequently shrinking the role of pragmatism in furthering humans’ thoughts and adjusting their actions.

According to Charles Percy Snow (1959), the gulf of mutual incomprehension, dislike, and even hostility between the two cultures of literary intellectuals and physical scientists is due to a lack of understanding. This lack adds to the predicament of whether design and semiotics reside in the humanities or the sciences. Unfortunately, reducing design to the domain of making physical things, artifacts, or cosmetic treatments seems to draw many people to the common *pars pro toto* mistake. The broad scope of semiotics has similar problems. The modern-day term semiology and its *pars pro toto* fallacy not only add to the confusion about the broad scope of semiotics, but also limit the pragmatic nature of signs. Semiotics is a cenoscopic “doctrine of signs” rather than an ideoscopic² “science of signs” (DEELY, 2004, p. 56).

2 *Ideoscopy* and *cenoscopy* are terminologies that have only recently begun to be taken up and developed. If we look back over the centuries, however, we find the word *scientia* in the Latin age, when only cenoscopic science existed, has a synonym, namely *doctrina*. In the Latin sense of *doctrina*, semiotics is a cenoscopic science; by contrast, sciences that are such in the specifically modern sense of specialization are ideoscopic. This distinction also explains why Thomas A. Sebeok (2001) prefers the term “doctrine of signs” over the Saussurean label “science of signs” (see DEELY, 2009, p. 181).

Clearly, one of the unfamiliar lonesome two is design, which has been unjustifiably shoved back and forth between the two familiar domains of arts and sciences. The other of the two is semiotics, whose supporters have been trying desperately to gain legitimacy by claiming semiotics as the science of signs. Consequently, semiotics is thought of as belonging mainly to the scientific culture. This limited understanding has been an unfortunate justification for decades. Because design and semiotics do not easily fit within either the culture of humanities or the culture of sciences, they are consequently marginalized or avoided.

We have a propensity to separate domains and fields, but they merely encompass legitimate boundaries; as Charles Sanders Peirce says: “We naturally make all our distinctions too absolute” (CP 7.438). The irony is that “[...] design is the primary underlying matrix of life” (PAPANNEK, 1971, p. 23) and semiotics is the pragmatic nature of design (NADIN, 1990). To overcome the separation of the two familiar cultures of humanities and sciences is to introduce them to design, the unfamiliar “third culture” (MARGOLIN; BUCHANAN, 1995), and semiotics, the “new branch” of human knowledge (LOCKE, 1955). Design and semiotics are the unfamiliar two that integrate, for neither design nor semiotics rejects other disciplines. Integrating the idea of design with the doctrine of signs offers *par excellence* a transdisciplinary perspective in which the role of pragmatism can fully be recognized and practiced.

3 Mutually pragmatic reciprocities

In the true sense of the word, design is about a purposeful pragmatic action. And whether as products of nature or artifacts of culture, the general notion of signs transcends the division of nature and culture. Even as cultural artifacts, not only do design deliverables serve functional and practical needs, but also their outcomes play an indispensable semiotic role in shaping the human lifeworld (*Lebenswelt*). These cultural artifacts play a mediating role in transforming the relation between human beings and their world (VERBEEK, 2000). Unfortunately, the limited understanding of the two words “design” and “sign,” and how they relate to each other, is not only a linguistic predicament but also gives a misimpression that eclipses the meaning of design as a third culture and semiotics as the new branch of human knowledge. Remarkably, design and semiotics not only share many characteristics of both the humanities and the sciences, but they also possess mutually pragmatic reciprocities that embody teleological qualities, distinctive ways of knowing, and manners of exploration.

3.1 Unearthing the etymological roots of design and signs

First, the word “design” from the Latin *designare* means to “mark out, to devise, to choose, to make a sign” (*signum*); The Italian word *segno* means “sign,” *disegno* means “design,” and *disegnatore* means “designer.” Hence, etymologically, design really means *De-sign* (cf. FLUSSER, 1999). This is fascinating but not surprising. Not only does the English word “design,” with its prefix “de,” imply that design is connected to the notion of “sign,” but also the prefix “de” indicates a shared place

of origin.³ The prefix “de,” as inherited from Latin and French, means “down from,” “concerning,” or “down to the bottom”—but not “do the opposite of” or “undo,” as is the primary function of the English prefix. In addition, according to Wolf D. Prix (2006), the German word for design is *entwurf*, rooted in the verb *werfen*, “to throw.” *Entwurf* consists of the two syllable *ent* and *wurf*, or “throw,” which implies casting or throwing signs together with the intention of looking forward toward a desirable outcome. Therefore, the word *ent-wurf* is literally *De-sign*. Here is further evidence of the etymological connection between the idea of design and the doctrine of signs (SEIF, 2015, 2019).

3.2 *De-sign* and the meaning of intentionality

De-sign offers multifarious theoretical and pragmatic activities that are pregnant with meaning and intentionality. It is well established linguistically that design is a purposeful act and semiotics is about signification; as an act of creation and interpretation, design and semiotics signify purpose. Intentionality, then, belongs to the very core of design thinking and semiotic interpretation. The connection between semiotics and intentionality has been established by John Deely (2007). The Latin notion of intentionality introduced by the German philosopher Franz Brentano (1973) not only fits fully into the context of semiotics, but also belongs to the very core of design thinking and action. The work of Brentano and Deely makes it easier for us to draw attention to the fact that design and semiotics are attached through the umbilical relation of intentionality. *De-sign* is intentional and covers a wide range of knowledge that is essential for engaging in social lives and responding to environmental challenges. As a multidimensional intentional human activity, *De-sign* is the way for human beings as “semiotic animals” (DEELY, 2010) to know there are signs, to interpret signs, and to design signs intentionally rather than instinctively.

Since intentionality conveys a tendency to move forward toward something, it is a journey adjusted by pragmatic navigation, not a destination to be arrived at (SEIF, 2005). Unfortunately, and despite its transcendental and cosmological principles, pragmatism has been subjected to misjudgments and narrow interpretations as a utilitarian rule of conduct (IBRI, 2017). Intention doesn’t mean aiming at a target and arriving at a predetermined destination to reach an expected result. Aiming at a known target or thing is following a known direction and a linear process. But a navigational journey through the unknown toward a desirable outcome is a nonlinear, expedient, and reiterative process, constantly adjusted and tuned by pragmatism. This why I make a distinction between intention and deliberateness; an *intentional* act is not the same as a *deliberate* act. A deliberate act is a linear utilitarian process appropriate for problem-solving strategies. But intentional *De-sign* is a navigational process that, while seeking desirable outcomes, tolerates ambiguity and is comfortable with the emergence of the unexpected.

De-sign intention makes it possible for us not only to perceive the world, but also to make meaning of it. Just as in Darwinian selection, in which nature produces

3 The “de” prefix was originally used in French, Spanish, and Portuguese personal names to indicate “place of origin” (see Online Etymology Dictionary).

results that are later modified or destroyed because of their unfitnes (JAMES, 1995),⁴ *de-sign* intention is sagaciously adjusted to achieve good fitness. Intentionality is a mark or sign of mental capacity that opens our minds, working together with natural occurrences to bring forth pragmatic fitness. In other words, natural selection can be guided by humans' intention through their capacity for design thinking and semiotic interpretation.

As the drive for meaning-making activity, intentionality allows humans to perceive and understand reality as past, present, and future. For reality “[...] is not only a question of what is, but as well of what could be and of what should be and what will in future be” (DEELY, 2002, p. 110). This is to say that reality is not something to be found “out there,” but is something to be created intentionally. As William James (1995, p. 95) maintains, we may receive a block of marble, but we intentionally carve the statue ourselves. And because the block of marble holds the potential for actuality, in the Aristotelian teleological worldview, the emerging form (the statue) has significant pragmatic consequences. For “[...] a potentiality that remains as such, without any form of actualization, is absolutely useless, invalidated by its own idleness” (IBRI, 2017, p. 77).

In *De Anima*, Aristotle defines soul as *entelechy*, the vital force of purpose and meaning intrinsic to the lifeworld, which must be guided by the pragmatic maxim.⁵ *De-sign* is the intentional thought and action of giving life to form, with the caveat of ensouling the world pragmatically. From its inception, pragmatism has been identified with the guiding purpose of intentional thought oriented toward an appropriate and integral action. Indeed, this is a “key to the pragmatic vision” (HOUSER, 2006, p. 9). This pragmatic vision *ipso facto* guides *de-signers* toward sensible thoughts and sagacious actions; and in doing so, it offers the means to navigate through the challenge of ambiguity and uncertainty innate to the *de-sign* process.

Intentionality is also associated with vitality, aliveness, and the intensity of the experience of making, creating, or designing. In the Heideggerian sense, intentionality is defined as “care” (*Sorge* in German), a condition in which humans identify their ontological significance of “being-in-the-world” (HEIDEGGER, 1927). In this sense, intentionality is “care for life” (SEBEOK, 2001), by which semiosis and life converge in the *Lebenswelt*. As an integrated mode of consciousness (GEBSER, 1985), *de-sign* intention is a care for life, utterly open and containing multipurpose spheres that must be evaluated pragmatically with respect to the veracity of *de-sign* outcomes. Juxtaposing pragmatically *de-sign* intention alongside *de-sign* outcomes requires both the courage to design and a deep understanding of the resilience of signs.

4 One can make a reasonable argument that such unfitnes, or waste, takes place in a grander process of intentionality, whether that intentionality arises from natural selection or divine purpose. One can also make a case that nature and the Divinity must have pragmatic purposes; for not knowing that nature has purpose does not invalidate the existence of such teleological phenomena.

5 According to Aristotle, once intention or purpose as the final cause is in place, other causes (material cause, formal cause, and efficient cause) follow. Hence is the significant role of the pragmatic maxim in intentionally guiding *de-sign* thoughts and actions.

3.3 Pragmatic knowing: the interplay of design thinking and semiotic interpretation

Design thinking is difficult to conduct by purely internal processes without sign representations and interpretations. To understand reality is to rely on signs, to recreate reality is to use design thinking, and to assess the appropriateness of such thinking and the integrity of creation is to make the most of pragmatism. However, there are some misconceptions about what design thinking is and what semiotic interpretation is for. Right off the bat, there is widespread confusion about the meaning of design outcomes and deliverables at the end of the design process. Design thinking is treated here in the broad sense of the word as a different way of thinking distinct from those in the dominant cultures of humanities and sciences. Design thinking goes beyond the limited understanding and popular everyday language that arrest the scope of design in the cage of artifacts and products as tangible deliverables.

A misconception about design thinking is the suggestion that it is solution oriented (CROSS, 1982). Such an approach implies the existence of problems that in social systems are ill-defined or “wicked” (RITTEL; WEBBER, 1973) and it limits design thinking to mere problem-solving strategies. Perhaps this is the most confusing issue about the nature of design thinking. To identify design thinking with problem solving orients human awareness toward “hardcore reality” that consists only of physical things.

Also, the misleading assumption of design thinking as being in the domain of the arts, therefore unscientific and irrational, has encouraged some scholars to believe that this way of thinking is based primarily on abductive reasoning. This belief—that design thinking depends on abductive reasoning on the grounds that design cannot be determined logically because the mode of reasoning involved is basically abductive—is misleading. There has been debate over whether design utilizes different reasoning from the conventionally known deduction and induction. But a design hypothesis is different from a scientific hypothesis (CROSS, 2011).

Traditionally, the two modes of reasoning—deduction and induction—are grounded in constructing or verifying true or false. Interpreting Peirce’s work, Lionel March (1976) claims that deduction is used to prove that something must be, induction to show that something actually is operative, and abduction to suggest that something may be. Following this, Nigel Cross (2011) maintains that it is this hypothesizing of what “may be” that is central to design thinking. However, in addition to relying on abductive reasoning, design thinking and semiotic interpretation utilize both deductive reasoning and inductive reasoning; design and semiotics do not embrace abduction to the exclusion of deduction and induction. Unlike in the humanities and sciences, where classic methods of reasoning are generally suitable for problem solving, these methods are inappropriate in design and semiotics. Design decisions and the action of signs are qualitatively different from scientific decisions, which depend primarily on quantitative measures; but this fact does not make design thinking and semiotic interpretation unscientific, irrational, or reliant only on abductive reasoning. Peirce characterizes abduction as a “guessing” kind of inference, which creates a hypothesis that can frequently lead to a wrong or fallible conclusion if deduction and induction are not taken into consideration.

Design thinking and semiotic interpretation are *ascientific*, not unscientific, in that they transcend the humanities and sciences. *De-signers* are bricoleurs who use a heterogeneous consortium of knowledge that crosses the boundaries of disciplines in the humanities and sciences to respond to a particular *de-sign* situation. As pragmatists, *de-signers* are skeptical of traditional values and absoluteness, and indeed abandon the pursuit for permanence and certainty (cf. HOUSER, 2006). Design thinking and semiotic interpretation are not based solely on syllogistic inference or autonomous disciplines, but involve cognitive awareness and abductive reasoning, which are at the core of all purposeful human activities. Decisions, then, in design thinking and semiotic interpretation involve a different, but integrative, mode of deductive, inductive, and abductive reasoning in order to lead to a sensible *de-sign* inquiry.

3.4 *De-sign* inquiry: beyond search and research

Following Peirce's doctrine of *fallibilism*, in which epistemological ephemerality is part of the human cognition, we can say that the pragmatic conduct of inquiry is the only source of human knowledge. The interrelation between design thinking and semiotic interpretation offers us a unique mode of exploration of what we can reasonably call *de-sign* inquiry.⁶ Such *de-sign* inquiry does not belong to a single discipline or field in our transmodern world, because *de-sign* inquiry involves cognitive awareness that transcends search and research investigations associated with autonomous disciplines (SEIF, 2015). Yet, while the boundaries among the categories of search, research, and inquiry are transparent, each category is different.

Extrapolating from Peirce's work (CP 7.668),⁷ I want to recognize the subtle difference among the categories of search, research, and inquiry. Search is a concept attainment process; metaphorically, it is a *springboard* that leads to a finding, a bridge that connects to further steps of exploration. Research is a concept recall process; it is characterized by the metaphor of an *empty chair*, which seeks an answer to the quandary of why a chair is empty. *De-sign* inquiry depends on concept formation, exemplified by the metaphor of a *symphony composition*. In *de-sign* inquiry, the activity is not a mere conglomeration of disciplines; rather, it is a transdisciplinary approach in which the researcher becomes a bricoleur, the *de-signer* of a diverse, meaningful range of things and imaginative interpretations. Indeed, as a transdisciplinary approach augmented by pragmatic judiciousness, *de-sign* inquiry demands the full range of skills of design thinking and semiotic interpretation (SEIF, 2015), thereby overcoming epistemological fallibilism.

Moreover, *de-sign* inquiry also utilizes Peirce's abduction, which is what is emotionally achieved by inferring something from the conjunction of a made

6 I make a distinction between "inquiry by design" or "research design," and *de-sign* inquiry. Inquiry by design and research design are about making procedural design decisions to develop knowledge, usually within traditional research methods or qualitative research; whereas *de-sign* inquiry utilizes wholistic awareness, systemic transdisciplinary understanding, design thinking, and the action of signs (SEIF, 2019).

7 Peirce asserts that there are "[...] three elements of reality: that by which ideas spring up that have concealed within them an accord with the mass of ideas; that by which one idea acts directly on another; that force from without that weeds out a part of the ideas and strengthens the rest" (CP 7.668).

rule and a found result—with the caveat that for such emotional inference to be sensible, pragmatic adjustments may be required. As concept formation, *de-sign* inquiry requires the art of making fiction, *finco*, to borrow a notion from Gregory Bateson (1972). For instance, riding on a beam of light was a fictional hypothesis that allowed Einstein’s concept formation of relativity to emerge. We can then aver that *de-sign* inquiry questions the existence of factual information and withdraws temporarily from being-in-the-world, from conventionally perceived reality. The function of pragmatism in *de-sign* inquiry is to provide a keen opportunity for experimental investigation and for reframing the challenge of “wicked” problems. In this sense, not only does *de-sign* inquiry question determinate reality and infallible knowledge, but it also involves the task of extrapolating, integrating, and synthesizing knowledge, real or fictional. Such a task is the semioethical responsibility of all human beings that this task becomes sensible and ethical only through the adjusting role of pragmatism.

4 Vocation of pragmatism: the audacity of design and the resilience of signs

Peirce’s articles *The Fixation of Belief* (CP 5.358-387) and *How to Make Our Ideas Clear* (CP 5.388-410) suggest that the main tenet of the maxim of pragmatism is centered on the meaning of any creative concept and is determined by the practical consequences that concept might have. The maxim of pragmatism (or Pragmaticism, to use Peirce’s later term)⁸ is always connected to a real challenge in a real context. As a method of ascertaining the meaningfulness of creative concepts, pragmatism is the principle quality through which the *de-sign* process can be adjusted and determined, and how appropriate design thinking and semiotic interpretation are expected to be in the conduct of life. Borrowing from a biblical metaphor, Peirce reiterates, “Ye may know them by their fruits” (CP 5.402), or we may say “actions speak louder than words.” The very meaning of pragmatism, then, cannot be ascertained without congruency between the intentional human thought and the appropriate human action, which are contextually bound to the integrative lifeworld experience. In the same vein, we can reiterate that design thinking and semiotic interpretation guide human action where the *de-sign* intention is assessed pragmatically against the *de-sign* outcome.

4.1 Pragmatism and *De-sign* beyond the ivory tower

It has been suggested that design ability and semiotic competency are possessed by only a chosen few professionals. But all of us, almost all the time and in varying degrees, are designing and interpreting (CROSS, 1995, 2011; PAPANNEK, 1971). Even though design thinking is a distinct form of intelligence, it is not the domain only of designers, something that some people have and others do not. Design thinking

8 I prefer to use the general term pragmatism, instead of the later Peircean term “pragmaticism,” which Peirce says “[...] is ugly enough to be safe from kidnappers” (CP 5.414). As a matter of fact, Peirce never abandoned using the original spelling of the term pragmatism. According to Nathan Houser (2006, p. 6), Peirce never meant to separate himself entirely from pragmatism. His “separation from the other pragmatists was more like a schism within a church than a paradigm shift.”

as a creative act is available to all of us (BOHM and PEAT, 1987), and semiotic interpretation based on the action of signs involves every human being as a semiotic animal (DEELY, 2010). While design ability and semiotic competency are embodied in human nature, they can also be lost or weakened without deliberate guided practice and the acknowledgement and awareness of the role of pragmatism.

The etymological connections among words like “designer,” “artist,” and “trickster” have steered many people away from engaging in design on the grounds that they are not able to practice the art of deception, and therefore they are not artists, designers, or tricksters (SEIF, 2019). Ironically, such connections cut both ways: while they reveal the mutual reciprocities among the expressions of artist, craftsman, *demiurge*, and creator,⁹ they also trivialize or misconceive the primordial act of creation by emphasizing only design’s deceptive action and ignoring the fact that signs tell both truths and lies.¹⁰ Because the thoughts of *de-signers*, as demiurges, can lead to benevolent deeds or malevolent actions, the role of pragmatism in assessing the consequences and appropriateness of thoughts and actions is indeed quintessential.

Adding to this, many linguists claim that thinking occurs in words, viewing semiotics as semiological (linguistic) competency and dismissing the phenomenon that human beings think in signs, not necessarily in words. This claim ignores the broader scope of semiotics and the resilient action of signs that permeate all aspects of life. Since “we think only in signs” (CP 2.302), and since the “[...] real thinking-process presumably begins at the very percepts” where “[...] a percept cannot be represented in words [...]” (CP 2.227), our perception and understanding work by creating and integrating signs through design thinking and semiotic interpretation. In other words, thoughts occur through images, and images can be achieved, reshaped, reframed, and manipulated sensibly through design thinking and semiotic interpretation.

The misconceptions that design ability and semiotic competency are available only to a chosen few, not only devalues human beings as semiotic animals, but also ignores the very primordial nature of humanity. The integration of design ability and semiotic proficiency can be traced back to what ancient Egyptians knew as the *intelligence-of-the-heart*, or what has been described as “cunning intelligence” (DETIENNE and VERNANT, 1991), which goes back to the time of the Greeks, who “[...] prized very highly a talent for making out against the odds of great strength” (DUNNE, 1993, p. 257). Throughout human history, cunning intelligence has been intimately connected with design thinking and semiotic interpretation. Again, these abilities are possessed by everyone not a chosen few of professionals and elites.

9 Interestingly, the word “demiurge” initially meant skilled public worker. But in Homer, the word has a wide application, including not only hand-workers for the people, handicraftsmen, or artisans, but also soothsayers or heralds (the carriers or messengers of signs). In Plato’s *Timaeus* (written in 360 BC), demiurge is presented as the creator of the world, fashioner of the universe, or shaper of the material world (<https://www.britannica.com/topic/Demiurge>). Demiurges are really the *de-signers* of reality (SEIF, 2019).

10 According to Umberto Eco (1976, p. 7), “semiotics is in principle the discipline studying everything which can be used in order to lie. If something cannot be used to tell a lie, conversely it cannot be used to tell the truth: it cannot in fact be used ‘to tell’ at all.”

4.2. Problem-solving strategy versus *De-sign* approach

Problem-solving strategies generally rely on search and research methods, which are not enough or are limiting for design thinking and semiotic interpretation. While both search and research *focus on* a specific issue and are positioned mostly as problem-solving strategies, *de-sign* inquiry *brings things into focus*, and is a trajectory oriented toward the emergence of that-which-is-yet-to-come. *De-signers* are often faced with complex challenges full of ill-defined or wicked problems, which cannot be exhaustively analyzed to solve or resolve them. Such problems can be dealt with only through reframing and the reiterative process of reflection-in-action to create new possibilities for transforming the status quo. Problem-solving strategies are ineffectual in dealing with contradictions if derived from a mechanistic fallacy that is blind to the nature of paradox—a crucial issue to which I will return to shortly.

The role of pragmatism in the *de-sign* process is not to furnish solutions to problems, but, as Peirce would conceive it, to open our minds “[...] to receiving any evidence, not to furnish evidence” (CP 8.259). While the maxim of pragmatism opens the possibility for solutions to a variety of problems or answers to questions, this does not mean that any given solution is perfect, or answer is right. “On the contrary, one may very properly entertain a suspicion of any method which so resolves the most difficult questions into easy problems” (CP 5.26). The irony is that while problems and solutions, challenges and resolutions, may represent differences and establish constraints on the surface, they often coevolve to create new opportunities that emerge through interpretation and reframing during the *de-sign* process.

De-sign experimentations (through design thinking, sketching, and manipulating mental images) and semiotic interpretations (through the action of signs) are the reiterative processes through which we learn how to intervene in the current reality and accomplish intentional changes in the world. Peirce’s idea of reality is precisely the outcome of intentional-active interpretations. Once again, since *De-sign* is a purposeful act, the *de-sign* outcome must be congruent with the *de-sign* intention. We are obligated to inquire about the purpose of a particular *de-sign* situation so that we may justify our prolonged course of reflection-in-action. That is why prolonged reflection-in-action and experimentation can be justified through the assessment of *de-sign* intention. When we reflect-in-action, we engage in praxis without depending on the categories of established theories and techniques within traditional disciplines and idiosyncratic biases. And when we reflect with others we become inquirers within a community of learners, constructing a comprehensive theory and an appropriate action for each unique *de-sign* situation.

In the *de-sign* process, there are no separations or absolute boundaries between thinking and doing as ways of conceiving a possible action or developing further actions. Each step builds on other steps in a reiterative process of feedback and feedforward. Through feedback and feedforward loops, *de-sign* thinking is experimentally employed to organize, revisit, and reiterate for a further conceptualization of the *de-sign* experience. It does not matter whether we start doing and then thoughtfully reflect, or reflect before doing. Thus, reflection can be before, after, or during action. I believe this is where John Dewey’s experimentation (1934) and Donald Schön’s reflection-in-action (1983, 1987) amalgamate to emphasize the role of pragmatism in *De-sign*.

Through the vocation of pragmatism, we do not perceive a separation between means and ends, between *techne* and *teleos*, but experience them interactively as we reframe the challenging situation at hand. In a pragmatic sense, we do not separate thinking from doing, ratiocinating, and experimenting our way to a sensible decision, which we must then convert to action (SCHÖN, 1983). This is where pragmatism “gives us an expeditious riddance of all ideas essentially unclear” (CP 5.206), and lends support to making our design thinking and semiotic interpretation essentially clear as much as possible, revealing and advancing our intention. Therefore, pragmatism is the *de-signerly* way to navigate through the process of creating a desirable meaningful reality, making appropriate adjustments in our thoughts and actions. For not only do our thoughts and actions influence the reality we desire to change, but also the created reality influences our thoughts and actions—such are the reiterative processes in *De-sign*.

5 *De-sign* and paradoxical thinking

An intrinsic principle of *De-sign* is our ability to persevere through paradoxes—thinking and doing despite all odds. Paradoxical thinking, I believe, is the most significant skill needed to engage in the *de-sign* process. The free movement within simultaneous multiplicities, transcending the appearance of things and creatively handling a range of polarities, is inherent to design thinking and semiotic interpretation. Obvious aspects of paradoxical thinking in the *de-sign* process are divergence and convergence, analysis and synthesis, knowing and not-knowing, sophistication and innocence, control and surrender, seriousness and playfulness, self-expression and expression on-behalf-of-the-other, continuity and change, real and imaginary, and technology and teleology. And on top of all that is expecting the unexpected as an emergent *de-sign* outcome.¹¹

Paradoxes are intertwined phenomenological polarities. There are three intertwined elements in paradoxical phenomena: awareness of the presence of contradictory forces, acknowledgment that these forces are rooted in life, and tacit assertion that these forces are linked together. A paradox surfaces when a set of individually plausible propositions is collectively inconsistent. Plausibility is clearly a degree of appearances rather than real drives (RESCHER, 2001). In all paradoxes, something both *is* and *is-not*, showing the limitations of mere rationality and the perception of absolute reality. Paradoxes are not a result of a mistake in our reasoning, but a defect in our ability to deal with cognitive dissonance.

Ironically, the ambiguity and uncertainty associated with the *de-sign* process can be a source of frustration and joy simultaneously. Ambiguity does not imply a lack of clarity; rather, it engages our tolerance to accept both what *is* and what *is not*. Nor does uncertainty mean that we cannot know, but that we may need to know differently from what we expect through common sense. Paradoxical thinking transcends *common sense* and leads to *uncommon sense*. While the former is based upon social norms and regulative syntheses that are neither constitutive nor aimed at

11 It suffices to mention here these paradoxes, as I have expanded on them elsewhere. For further elaboration on paradoxical thinking in design and semiotics, see *De-sign in the Transmodern World: Envisioning Beyond Absoluteness* (SEIF, 2019, p. 217–229).

a deep understanding of antinomies, the latter leads toward such deep understanding, grounded in the integration and transparency of paradoxical thinking.

Ambiguity and uncertainty about the outcome of our thoughts and actions are at the heart of Peirce's pragmatism. When we face ambiguity and uncertainty during the *de-sign* process, we struggle against doubt and belief in our capacity to proceed through the process. But such a paradoxical experience permeates our lifeworld. For, as Peirce says, "If we did not struggle against doubt, we should not see the truth" (CP 2.84). Underscoring the role of pragmatism in persevering through the paradox of doubt and belief that occurs during the *de-sign* process, brings forward Peirce's proclamation:

[...] both doubt and belief have positive effects upon us, though very different ones. Belief does not make us act at once, but puts us into such a condition that we shall behave in some certain way, when the occasion arises. Doubt has not the least [such] active effect, but stimulates us to inquiry until it is destroyed. [...] The irritation of doubt is the only immediate motive for the struggle to attain belief. It is certainly best for us that our beliefs should be such as may truly guide our *actions* so as to satisfy our desires; and this *reflection* will make us reject every belief which does not seem to have been so formed as to insure this result. (CP 5.373–CP 5.375; *our emphasis*).

Doubts and beliefs are bewildering paradoxes that are intrinsic to design thinking and semiotic interpretation; and they are not only acceptable, but even welcome if only we can develop the capacity to persevere through them. Again, this is where pragmatism, as the method of ascertaining the meaningfulness of *De-sign*, determines the congruency between the intention of our thoughts and the appropriateness of our actions, taking into account the positive effect of doubt and belief. By tolerating the ambiguity and intentionally dwelling in the uncertainty associated with *De-sign*, we can recreate our world and ourselves simultaneously. Since pragmatism is a method of experimentation that judges the effectiveness of thought and action (JAMES, 1995)—where there are no absolute values in determining right or wrong answers or in believing in predetermined truth—it demands the courage to persevere through the paradoxes of *De-sign*.

But not all paradoxes are *de-sign* challenges. According to Quine (1962, 1976), there are three distinguishable classes of paradoxes: a "veridical paradox" produces a result that appears absurd, but is demonstrated to be true, and its argument convinces us nevertheless; a "falsidical paradox" establishes a proposition that not only appears false or self-contradictory, but is also false due to a fallacy in the demonstration; and an "intractable paradox" is neither a veridical paradox nor a falsidical paradox, but may be an "antinomy" which reaches a self-contradictory result by properly applying accepted ways of reasoning. The most startling of all paradoxes that are intrinsic to *De-sign* are in the third category, antinomy. This category requires a major shift in our conventional ways of perceiving the contradictions in reality.

There are many intellectuals desperately trying to find dualistic and reductionistic explanations to solve or resolve the phenomenon of paradoxes, but they end up producing tricky situations and immense confusion. These explanations

are an indicator of a misunderstanding of the nature of paradoxes. The challenge of paradoxical situations has much to do with our habitual ways of reasoning to solve problems. To view paradoxes as problems puts us in a wrong frame of mind, searching for solutions that do not exist. And to associate paradoxical challenges with problem solving diverts human attention toward absolute, hardcore reality, forcing us to think of reality as mere physical things that need to be fixed or maintained. This is the common fallacy of applied technical fixes to wicked social problems.

De-sign is not about the duality of right or wrong answers, real or imaginary; just as with paradoxes, there are no true or false statements that stand alone. It is through paradoxical thinking that we can make sense of the appropriateness and affirm the integrity of our thought and action. Again, to emphasize, paradoxes are not nonsensical possibilities or a result of a fault in our reasoning or common sense, but a defect in our ability to deal with a cognitive dissonance, to be comfortable with ambiguity and uncertainty.

6 The sagacity of pragmatism and the value of perseverance

Interestingly, there is a meaningful interrelationship between the value of perseverance and the notion of *De-sign*. The two words “perseverance” and “design” are surprisingly the same word, *تصميم* (tasmeame), in the Arabic language (SEIF, 2014). Since we already established that *De-sign* is the fusion of design and signs, we can say that design thinking and semiotic interpretation occur only when we persevere through the contradiction between what *is* and what *ought* to be, between a world we experienced in the past and a world we desire in the future. As Peirce says:

We are continually bumping up against hard fact. We expected one thing, or passively took it for granted, and had the image of it in our minds, but experience forces that idea into the background, and compels us to think quite differently. (CP. 1.324).

Determination, patience, and tenacity are characteristics of the courage to persevere through the paradoxical burden of being at ease with what is and what might or could be, “being-in-the-world” (HEIDEGGER, 1927) yet “withdrawing-from-the-world” (SARTRE, 1948), and being patient with the emergent process of that which is yet-to-become. Peirce affirms that thoughts are enveloped in signs, where representamen, object, and interpretant are a triadic relation and mutually exchangeable. And through this triadic relation of signs, the human mind can perceive, discover, and create significant relations that persevere through such negating, unfolding transfigurations. This is where design thinking and semiotic interpretation are significant for the development of human understanding in order to tolerate ambiguities and be comfortable with uncertainties innate to the *de-sign* process.

Søren Kierkegaard says, “the paradox exists for love” ([1843] 1987, p. 179), “[...] for only in love is the different made equal, and only in equality or in unity is there understanding” ([1844] 1985, p. 25). It is really more rewarding to tolerate ambiguity and dwell in uncertainty by persevering through paradoxes and living

gracefully with contradictions and antinomies than to simply try to solve or resolve them as mere problems, and end up facing more problems. Granted that paradoxes can cause confusion and often trigger conflict between explicit social rules and desired ways of life. “But one must not think ill of the paradox, for the paradox is the passion of thought, and the thinker without the paradox is like the lover without passion: a mediocre fellow” (KIERKEGAARD, [1844] 1985, p. 37). Particularly when we engage in the *de-sign process* or a love relationship, we have to persevere through contradictions. I am inclined to say that *De-sign* is essentially a *wise love*. The role of pragmatism in persevering through the paradoxes of the *de-sign process* can make our destiny of negation rewarding.

7 Destiny of negation: the maxim of pragmatism and the phenomenon of *De-sign*

Peirce’s phenomenological categories: firstness (the possible), secondness (the existent), and thirdness (habits) (CP 1.25) are central to our understanding as to why the maxim of pragmatism and the phenomenon of *De-sign* constitute the *destiny of negation*. Not only does thirdness involve the ideas of secondness and firstness, but never will it be possible to find any firstness or secondness in reality that is not associated with thirdness (CP 5.90). With this in mind, we can consider that negation belongs to the category of thirdness. Negation, then, mediates between the binary forces of the *freshness* of the first and the *brutality* of the second, between the contradictions of imaginative interpretation and factual information. This is where *De-sign* can change what we take for granted because of what was given in the past, reframe our perception of what exists in the present, and imagine what will be possible in the future (SEIF, 2019).

But destiny of negation does not mean we are arrested or confined by overwhelming inevitable circumstances or tragic events of *that-which-already-exists*; rather, destiny of negation is being attracted by the serendipitous desire, intention, and love of *that-which-is-yet-to-come*. The destiny of negation can be a joyful journey if we do not allow ourselves to experience it only as a grotesque chimera down a rabbit hole. What we must do, is simply open our hearts and minds to realize that the maxim of pragmatism and the phenomenon of *De-sign* have been in our consciousness for eons. In the Peircean sense, phenomenology, epistemology, and ontology are intertwined metaphysically (IBRI, 2017), and, through the *de-sign process* augmented by pragmatism, the *de-sign* outcome emerges in a manner that is magical, precious, mysterious, and lovable.

As an act of creation, *De-sign* desires wholeness. But this desire and pursuit of wholeness is called love (HYLAND, 2008). Based on Plato’s *Symposium*, this desire for wholeness is governed by a triadic process: the human condition of incompleteness, the recognition of incompleteness, and the desire to overcome incompleteness (see HALL, 1982; and HYLAND, 2008). This triadic process has remarkable features of reciprocity, where the love for wholeness is manifest in the desire to create a microcosmic whole and to seek its expansion into an evolving macrocosmic whole.

When we engage in *De-sign*, we have to not only persevere through the paradoxes, but also face the challenge of incompleteness intrinsic to the nature of wholeness. Such perseverance is also our destiny of negation, which is attracted

by the unrelenting desire and love for wholeness that is triggered by Eros, which can be perceived as the *generator-of-desire*, or *G.O.D.*¹² God, as Whitehead ([1929] 1978, p. 344) has expressed, “is the lure for feeling, the eternal urge of desire.” The strong desire for inclusiveness to overcome the ontological incompleteness of wholeness is what I call *wholophilia*, love of wholeness (SEIF, 1995, 2010/2018, 2019). Wholophilia is both a precondition for, and a manifestation of, *De-sign*. In the Hegelian sense, if love does not act, it has no existence. Such is the interconnected relationship between the act of love and the *de-sign* process, which is motivated by desire and a sense of wonder toward emergent and yet unexpected outcomes—an experience of falling in love.

Inferring from the essay *Evolutionary Love* (EP 1:352–371, 1893) and *Works of Love* (KIERKEGAARD, [1847] 1995), I believe the ultimate purpose of *De-sign* is unequivocally the path to evolutionary love. Peirce tells us that there are three modes of evolution: “evolution by fortuitous variation (tychastic), evolution by mechanical necessity (anachastic), and evolution by creative love” (agapastic) (CP 6.302). The third mode, agapasm, incorporates the other two, because by the very nature of occurrences, “[...] the line of demarcation between the three modes of evolution is not perfectly sharp” (CP 6.306). Creative love is a principle that conciliates all oppositions through *De-sign*. Indeed, the power of love is a great substratum of evolution that not only permeates through Peirce’s pragmatism, but also throughout his entire oeuvre (IBRI, 2013).

The relationship between evolutionary love and *De-sign*, in my view, ought to be assessed through the maxim of pragmatism. For pragmatism is the measure of the decency and veracity of our thinking and conduct. Pragmatism, *De-sign*, and evolutionary love are at the heart of Peirce’s *agapism*, which *synechism* (continuity) calls for. And since continuity does not imply sameness, the possibilities of *synechism* are inexhaustible (HAUSMAN, 1993); every *de-sign* situation offers a unique experience of infinite possibilities, actualities, and choices for creating reality. And because of this experience, *de-sign* outcomes are only invariant aspects of the unfolding process of continuous wholeness. *De-sign* outcomes reveal a new sense of wholeness, and *de-sign* deliverables concretize that which cannot otherwise be explicitly communicated (SEIF, 2019).

Since love builds up, and to build up “is to erect something from the ground up” (KIERKEGAARD, 1847, p. 211), the act of building something is love, and because “[...] building up is love’s most characteristic specification,” love is “the ground of everything” (ibid., p. 216). Certainly, we can build only from the ground up; therefore, “[...] we can build up only by presupposing love. Take love away—then there is no one who builds up and no one who is built up” (ibid., p. 224). *De-sign*, as a loving relation between what is being designed and *de-signers* as agents of change, is mutually reciprocal. *De-sign* is a continuous palingenetic phenomenon that makes *de-signers* never the same; neither are design situations identical. This is to say, while *de-signers* transform reality, they also regenerate themselves in a constant ontogenetic manner (SEIF, 2019).

12 In my view, Eros is not a kind of love, as conventionally perceived. Rather, Eros is the trigger of all kinds of love (for further discussion of the matter, see SEIF, 2010/2018, 2019).

To conclude, the role of pragmatism in *De-sign* can never be overestimated. The maxim of pragmatism and the phenomenon of *De-sign* are indeed intertwined. Just like pragmatism, and to appropriate some words from William James (1995), perhaps *De-sign* is a new name for some old ways of thinking, being, and doing in the lifeworld. For, as Shakespeare said, “a rose by any other name would smell as sweet.” We can infer from Peirce’s pragmatism that the ultimate purpose of thought is not only to conceive action, but, if we are created in the image of God, also to share with God the very act of creative love through *De-sign*. Pragmatism inspires us to harmonize the difference between our idealistic and realistic inclinations, to form our world and be formed by our creation, to be bold in persevering through the paradoxes of life. Thereby, the role of pragmatism in *De-sign* is to assess the effectiveness of our thoughts and the integrity of our actions in order to be capable of sharing with the numinous the very act of creative love.

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