

DESIGN JUDGEMENT: DECISION-MAKING IN THE 'REAL' WORLD



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***D**esign is about creating the 'real' world around us. Real life is complex, dynamic and uncertain. Truth is difficult enough to know, even with the best science, but 'reality', the domain of human experience, can be overwhelmingly paralysing and beyond comprehension or understanding. Careful, accurate description, concomitant with clear explanation, is necessary but not sufficient in the quest for enough understanding to allow wise decisions to be made. The value of judgement is that it allows individuals to overcome their paralysis and engage with the messy complexity of life in a way that, when done well, can bring function, beauty, and meaning to human existence. In this paper we will examine judgement, particularly design judgement. We argue that a better understanding of judgement is needed if we want to improve our design ability in an intentional manner. Judgement is a key dimension in the process of design. The ability to make design judgements is what distinguishes a designer as a designer. The ability to make good design judgements distinguishes good design.*

INTRODUCTION

Design judgement holds many things in common with the other categories of judgement, but the outcome or end is distinct because design judgement facilitates the ability to create that-which-is-not-yet. It is the type of judgement related to creativity and innovation. It is concerned with judiciously crafting the compositional whole of an imagined design. When well executed it can create beauty and evoke the sublime. Design judgement is the ability to gain or project insight, through experience and reflection, into situations which are complex, indeterminate, indefinable

and paradoxical. This results in the formation of meaning and value by engendering relationships of unity, form, pattern and composition. Judgement is a process of taking in the whole in order to formulate a whole. The outcome of judgement is the expected unexpected outcome that yet fits congruently, with integrity, the driving intention behind the design process in the first place. In other words, the operational outcome of any judgement is dependent on the nature of the intention.

In the examination of design judgement we have found it productive to distinguish between several types

of judgement (these are developed in greater detail in Nelson and Stolterman, 2002). The reason for this is that the complexity of design is such that a too simple definition of design judgement will be both insufficiently rich and impossible to relate to the different kinds of experiences met in design practice.

This paper is based on the idea that design judgement must be made a full and equal partner with rational decision-making in any design process. To facilitate this, judgement must be made more intellectually accessible and pragmatically effective. The effectiveness of design judgement is not jeopardized by an improved understanding of its 'nature' as intuition can be threatened by too much self-consciousness. The designerly approach, or perspective, taken in this paper, is based on the conviction that it is possible, through intentional (intellectual) effort, to understand and improve our capacity and skill in making judgements, particularly design judgements.

The ideas presented in this paper are not about making 'true' judgements – but are about treating design as an aesthetic and purposive form of making the imagined real by utilizing our ability to make 'adequate' judgements. To be more reflective in order to understand more about the activity of judgement will not interfere with the ability to make good or better design judgements. It will only help. Learning to treat design as an informed process of intention and not one of chance or necessity can improve the possibility of achieving good design outcomes.

WHAT IS JUDGEMENT?

Judgement is a key dimension in the process of design. The ability to make solid design judgements is often what distinguishes a stellar designer from a mediocre one. By judgement, we mean that which is at the heart of wisdom, in all of its manifestations. For us, judgement is the means

and wisdom is the outcome. In fact, wisdom can be defined as good judgement, which enables right action and appropriate change.

Judgement is a form of decision-making that is not dependent on rules of logic found within rational systems of inquiry. Judgement, however, is not irrational because it follows its own form of dialectic. In lieu of judgement being founded on strict rules of reasoning, it is more likely to be dependent on the accumulation of experienced consequences of choices made in complex situations. Learning to make good judgements is therefore not a matter of learning to follow the steps of a technique, or to follow directions dictated by a method or algorithm, or to impose the *a priori* constraints of a theory.

What one acquires here is not a technique; one learns correct judgements. There are also rules, but they do not form a system, and only experienced people can apply them right. Unlike calculating-rules (Wittgenstein, 1968).

Judgement is, by nature, an elusive animal. It is as distinct from rational decision-making as it is from intuition. Judgement has practical, pragmatic value, and academic rigor, without it being codified and generalized as reason demands of its offspring, science. We believe the capacity to judge can be designerly learned, practised and applied in design circumstances, without destroying its essence and value. This is unlike the case of intuition, where too much intellectual attention is often feared by artists who feel that reason, at its best, is the opposite of intuition and, at its worst, a mortal enemy. The ability to make good judgements is as essential in design as it is in business, law, medicine, politics, art, or any other profession. For a skill that is necessary to so many human endeavors, it is surprising that judgement-making is so little understood, and so seldom part of one's formal education. Even so, there have been some significant exceptions to

the overall lack of attention paid to the formal development of the concept of judgement.

Immanuel Kant, for example, a German philosopher in the eighteenth century, placed judgement as one of three cognitive faculties of human beings. For Kant, meaningful propositions were not just the consequence of empirical fact or analytic logic. They were also the consequence of normative judgement. In addition to his categories of judgements-of-fact, he developed philosophic concepts of judgements-of-ethics and judgements-of-aesthetics as well. His concept of aesthetic judgements (Kant, 1790) is not focused on the same outcomes as the concept of design judgements developed here but there is some influence nevertheless.

John Dewey (Dewey, 1910) stated that there is an intimate connection between judgement and inference. The intention of inference is to terminate in an adequate judgement that is equally a good judgement, through the interpretation of facts. According to Joseph Dunne (1993), John Henry Newman, a nineteenth-century Christian apologist, proposed that judgement was made possible by the intervention of the Illative Sense, which informed reasoning leading to correct judgement. In his book, Dunne develops his own, well-grounded argumentation for judgement by elucidating the distinction between the two Aristotelian forms of knowledge: 'techne' (Gr. productive, technical knowledge) and 'phronesis' (Gr. practical, personal knowledge). Dunne argues for an understanding of 'practical wisdom' that makes it possible to take the complexity of reality into account.

More contemporary examples of judgement-focused scholarship, with close relationships to the present work on design judgements, includes the seminal contributions of C. West Churchman (1968). Churchman defines judgement as a 'well substantiated' belief, a belief held collectively by

a group, in contrast to a belief held by an individual. Sir Geoffery Vickers (1995) is known, as mentioned earlier, for his development of the concept of appreciative judgement in public policy design. Appreciative judgement is the capacity to understand, or appreciate, a situation through the discernment of what is to be considered as background and what is to be considered as foreground, in the formulation of a project context. Horst Rittel, another example of someone who has formally developed the concept of judgement-making, focused his attention on the fields of design and planning (Rittel, 1972). Rittel went so far as to state that every logical chain of thought is ended only by an offhand judgement, one of several types of judgement he considered, and not by reasoned decision-making.

A lack of appreciation for judgement as a legitimate means of decision-making is not only revealed by its absence in curricula and professional discourse, but by the negative connotations one hears regarding judgement in everyday conversations. These conversations are full of comments that are indicative of the distrust of judgement: 'Don't judge me;' 'Don't be judgemental;' 'That's only your judgement.'

Judgement can best be understood when it's considered within the context of knowledge, knowing and the knower. To put it simply, judgement is knowing, based on knowledge that is inseparable from the knower. By this, we mean that judgement is based on accessing knowledge generated in the particularity or uniqueness of a situation: knowledge that is inseparable from the knower and is only revealed through the actions of the knower. This is in contrast to decisions that are made based on knowledge that can be - and is of value primarily because it is - separable from the knower.

Judgement knowledge cannot be stored in libraries or on databases. Colleagues in controlled experiments can't replicate it. Neither can it be memorized or accumulated

in any quantity so as to build a field of expertise. Judgement knowledge has instrumental value only for a particular situation, and loses its direct and immediate relevance in the next setting. Therefore it becomes clear that while separable knowledge deals in that which is universal, or generalizable, the inseparable knowing of judgement deals with particulars and ultimate particulars. This implies that designers can learn to make better judgements, but cannot learn - *a priori* - the kind of knowledge necessary for particular judgements at the moment they occur. Skills and competencies can be practised and mastered in support of future actions, but should not be confused as knowledge from judgement itself. Scientific knowledge, the ultimate separable knowledge, plays a necessary supporting role in good judgement-making but is very different in character from the knowing that's embedded in judgement.

Knowledge that is separable is part of a continuum of knowing that moves from data, to information, to knowledge. There is no similar continuum in judgement knowledge. However, there is a connection to what has traditionally been considered wisdom. The outcome of good judgement - wise action - has been considered, directly or indirectly, as evidence of wisdom.

Given these general definitions, we will examine judgement, and especially design judgement. We argue that a better conceptual understanding of design judgement, in its different specific manifestations, is needed if we want to intentionally improve our design ability. Although design judgement cannot be separated from the designer, the designer can reflect upon the nature of judgement-making, and begin to approach the ability to make good judgements as an essential key to accessing design wisdom.

Unfortunately judgement is often dismissed as an inappropriate means of decision-making. It is also deemed to be an unsuitable foundation for action or belief.

Judgement is put into the same category as mere opinion or conviction, which, since the time of Socrates, has not been considered a legitimate form of knowledge in the Western tradition. Thus, it has not been considered to be a fit candidate for accessing design wisdom, the necessary condition for right action. (It is paradoxical that we often receive the advice to 'Trust your own judgement' when others want some demonstration of our personal accountability.)

Judgement is also touted as the enemy of creativity. Students of creativity are constantly admonished to suppress their judgement, to hold it in abeyance, and allow the free flow of their ideas to emerge. Creativity and innovation are often proffered as the polar opposites of judgement. In reality, though, well-managed judgement is a necessary component in the synthesis activity of creativity and innovation. Without exercising judgement, creativity is diffuse, and innovation rootless.

Judgement is acceptable in day-to-day settings in the arenas of life that traditionally require judgement calls to be made. Judges are required for beauty contests, in order to decide who is the most 'talented', and in sports competitions to make decisions on whether a specific behavior is good sportsmanship or not. Judgement takes on its most serious role in the realm of law. Judges, in this case, are expected to make considered judgements, based on their own experience, as well as their understanding of the qualitative and quantitative truth of a particular situation, as compared to an idealized code of law.

And not to be forgotten is another form of judgement that has concerned humanity for millennia, often called 'the final judgement'. In this situation, a supreme deity sits in judgement of an individual's life, in anticipation of the inevitable end of worldly existence and the beginning of eternity. The anxiety and fear of this form of final judgement filter into attitudes towards more corporeal forms of

judgement that carry the threat of punishment from some authority figure. Police, judges, bosses, parents, teachers and others with positional authority are confronted with negative reaction against their actual or potential for authoritative judgements. The antagonistic reaction to this kind of ultimate authority and power over the measure of an individual's worth often results in the rejection of the idea of judgement altogether.

Our distrustful attitude toward judgement is quite fascinating when you stop to consider that people are engaging in judgement all the time. It is as common as breathing. In fact, nothing would ever get done without small or immense judgements being made by people all the time.

This is because real life is complex, dynamic and uncertain. Fact is difficult enough to know even with access to the best science, but reality, the domain of human experience, can be overwhelming and beyond comprehension. Careful, accurate description, concomitant with clear explanation, is necessary but not sufficient in the quest for enough of the right kind of knowledge to allow wise decisions to be made.

Therefore without the capacity to authentically use judgement there often emerges a situation commonly referred to as the 'paralysis of analysis', and its frequent companion, 'value paralysis'. These two types of paralysis result from the popular assumption that decisions need to be based on a comprehensive, factual understanding of a specific situation. Further, this comprehensive, accurate understanding, imbued with rational logic, will eventually lead to the 'correct' solution. It is also assumed that this approach renders results not swayed by any personal preferences. In other words, that it is an objective and unbiased process. Due to their aspiration to be comprehensive, approaches like this often lead to

oversimplifications at the same time as they lead to endless efforts in finding and analyzing all the 'necessary' facts and information.

This is because to be comprehensive means to deal successfully with an unimaginable amount of data and information. In order to deal realistically with the complexity and complication of large amounts of information within a reasonable amount of time it is necessary to find ways to simplify. This means ignoring or leaving things out that cannot easily be characterized. It also means using generalized abstractions to stand in for the multiplicity of particular constellations of sense data. In the process of simplification and generalization, nuances and subtleties are lost. Even things that are obviously apparent are lost because they are not easily understood and conveniently accessible through descriptive or explanative frames of reference. There is, obviously, a danger in not dealing with the full richness and complexity of reality.

The value of judgement is that it allows individuals to overcome these forms of paralysis and engage in the messy complexities of life in a way that, when done well, can bring function, beauty and meaning to human existence. Formal, rational decision-making processes are often held up as the standards to be used by businesses, governments, institutions and foundations, and even by individuals, when one must engage in complex, dynamic issues. The irony in this is that decision-making, based on rational analysis alone, actually creates more options and divergence, than it does convergence (in the form of focused outcomes). This is true even when there are resources and time enough to allow a comprehensive process to unfold. Judgement, on the other hand, is a convergent process. It brings diversity and divergence into focus; that is, it brings form and meaning to messy real-world situations. Best of all, it is 'on time' or 'in time', which means that it takes place within the

constraints of a reasonable time frame based on a time line of realistic expectations and limitations. This is the 'discipline' of judgement. It is making good choices in a timely way without the delays associated with never-ending studies.

We believe that judgement is a basic human activity. But, what exactly is this phenomenon? There is not just one kind of judgement because reality presents itself to us with such a full richness and complexity that it compels us to develop different configurations of judgement. In any complex situation - where there is a particular purpose and need to make decisions and take actions - we rely on a number of different types of judgements. These include: intellectual judgement, practical judgement, ethical judgement, aesthetic judgement, professional judgement and design judgement.

These various kinds of judgement relate to specific aspects of our experience of reality. People use these judgements to deal with the opportunities, problems, questions, and uncertainty they face. Keep in mind that we never find any of these judgement types in their pure form; there is always overlap between them. Because we are interested in how judgement affects us as designers, we will focus more intently on the phenomenon of design judgement.

DESIGN JUDGEMENT

In our examination of design judgement, we have found that it actually encompasses several different types of judgement. For instance, as designers we face situations where we may have to make an overall judgement on the quality of a specific material or personnel used in a design. At other moments we may have to judge how the chosen parts of a design fit together as a whole - as a composition. These two situations are not only different in their focus, they also reveal how different the act of making a judgement can be, and how our skills and knowledge underlying a judgement may differ.

We do not claim that the types of judgement presented

below are the only possible ones, and we want to be careful to recognize that we are only talking about design judgements - this is not a discursive, generalized theory of judgement. Also, this not an attempt to define design judgement as residing in the realm of the true; instead this is a concept that resides in the domain of the real. It is an attempt to create an image of design judgement that is practical enough to help designers and non-designers better understand how designing works and improve their competence as designers.

Reflecting on design judgement, we can initially distinguish between client judgements and designer judgements. We can also divide design judgements into conscious or subconscious acts.

Before we explore designer judgements let us briefly discuss client judgements. A client or someone acting on their behalf, first of all, has to make the judgement of intention. For a client, it is always possible to choose - or not to choose - design as a way to approach a situation. The client can make the judgement that design is not the appropriate approach, and may instead choose a problem-solving approach, a political approach, or even a management or spiritual approach. Design is, in every situation, only one of many options. And sometimes design is not necessarily the right option. If a client needs an approach that will lead to a guaranteed and predictable result, design is not appropriate since it is about creating the not-yet-existing, which by definition is always a risky business. This judgement of approach, if made in favour of design, marks the entry into a design project and is always made by the client or surrogate client.

Once within the design process, the client or client's agent must make a judgement of purpose. It is the client who has to make the overall judgement about the purpose of engaging in a design process. This does not mean that the client necessarily will decide what has to be the

outcome of the design. By this judgement, the client will set the stage for the design process, and also provide the designer or design team with a first approximate direction for all energy, thoughts and actions.

In the design process the client is also responsible for making judgements of worth or value. A designer can never make that judgement on behalf of a client. He or she might be able to suggest or try to influence or educate a client to appreciate certain qualities and certain design consequences, but the final judgement of the worth and value of a design is in the hands of the client.

These client judgements ought to affect the designers' judgement on whether or not to serve the client in the first place. The making of these seminal judgements by the client not only creates restrictions on possible actions by the designer, but also instills accountability and responsibility by the designer concerning the systemic effects of the judgements. There is rarely a clear demarcation, however, between these client and designer judgements because of the mutual influence clients and designers have on one another. This means that the judgements made by the designer have an impact on the client's realm of judgement. These initial judgements are also modified and refined throughout the design process by the cross-catalytic effect of judgements being made in the different domains of responsibility.

It should be obvious, at this juncture, that the client does not merely provide an entry point into the design process. The client plays an ongoing role throughout the design process by having the responsibility for the judgements described above. Design judgements are never made once and for all. New ideas, creative changes, changed preconditions and increased understanding and knowledge all change the context for the judgements made. Judgement-making in design is fully dynamic and dialectic, between conscious and subconscious judgements, and between client and designer judgements.

Designers are expected to make a lot of judgements and are held accountable for their consequences. But since these judgements are not all of the same type, and depend on which category of judgement the designer is engaged in, different strategies and tactics are demanded which require different commitments of time and energy.

The entry point - or gateway - for a designer into a design process is marked by an altruistic judgement of whom to serve - the judgement of service. Once this judgement is in place, with all its concomitant relationship-building, contracting and related activities, a design project can be initiated.

Within a design project, we divide designer judgements into ten different types. These judgement types are described in greater detail elsewhere (see Nelson and Stolterman, 2002), here we will only briefly introduce them. Our only purpose here is to make the case that a better understanding of design judgements is fundamental to the further development of a designer's competence. Just as the client is responsible, and accountable, for client judgements - approach, purpose and worth - the designer is fully responsible and accountable for the ten presented below.

- Default judgement—internalized judgements of skill
- Deliberated off-hand judgement—experiential learning judgements
- Appreciative judgement—discernment of foreground from background
- Appearance judgement—judgements of style, nature, character, and soul
- Quality judgement—judgements of excellence and worth
- Instrumental judgement—judgements of craft
- Navigational judgement—judgements in the moment in a dynamic environment
- Framing judgement—determination of boundaries and limits

- Compositional judgement—causing distinction and diversity to stand in unity
- Core judgement—subconscious limits of value and meaning.

A designer will in any design process face situations where all or some of these types of judgements are needed. In summary, both clients and designers are elements in a compound relationship, which is animated by the interaction of many different types of judgement. Judgements are continually being made, and then refined, throughout any particular design process. Each set of judgements, whether designer- or client-related, must be made by the accountable individual(s). If for instance clients allow the designers to make judgements of purpose and/or worth, then the process becomes one of art rather than design. If, on the other hand, the clients are encouraged to make judgements regarding composition or framing and containing, then it becomes a process of facilitation rather than design.

The key idea is that design is a system of relationships, which include a variety of roles and responsibilities (such as designers and clients), from which design activity and outcomes emerge. It is a composition that depends on the interaction of different design roles for the emergent quality to be produced, in the same way that oxygen and hydrogen combine to form water. Wetness is an emergent quality, not present in either type of gas, when observed in isolation. Similarly, the role of designer cannot exist out of relationship with a client because design action is an emergent quality.

This plethora of judgement types creates a rich 'map' of complex relationships. In a design situation, neither the client nor the designer can use this map as a guideline, not even when the meaning of the different judgement types is more developed. Its purpose is instead to make us realize that design is a process, fully guided by design judgements of astounding variety and type. There is no temporal aspect in

the map, and there is no priority to the type of judgements necessary. In real situations, these judgements are made all the time in a complete dialectical relationship. Of course, certain design processes do demand more of specific kinds of judgement, while others demand less. Yet, the map is still valuable as a tool for reflection and as an intentional aid for improving one's design ability. The map can even be used as an analytical tool. Such an analysis might be helpful to explore one's own way of approaching a design task.

We must address at least one more type of judgement, and that is mediative judgement. All the previously discussed types of design judgements will, in one way or another, contribute to the final design. A designer therefore needs to make a judgement on how this whole should be orchestrated. Thus, he or she must balance and proportion the different types of designerly judgements using mediative judgement.

A designed whole is the emergent consequence of all the judgements made in a design process. It is a synthesis of three wholistic domains: the adequate whole, the essential whole, and the significant whole.

The meaning of the concept of 'whole', in relation to judgement in design, is one of the most crucial things to understand about design; in effect distinguishing it from other intellectual traditions. Design judgement has a special character, since the resulting design is something produced from imagination, something not-yet-existing. In its various forms, design judgement relies on all our capabilities as humans. It is based on intellectual and conceptual thinking, as well as aesthetic and ethical considerations, and its fundamental starting block is the character of the designer.

CONCLUSIONS

As stated at the beginning of this paper, we believe that design judgement is a full and equal partner in any form of design inquiry, on a par with rational decision-making.

Design judgements are not weakened by an improved understanding of their nature, as opposed to the mystery of intuition, which can be threatened by too much self-consciousness. The judgements that constitute design, as illustrated in this paper, are based on the conviction that it is possible through intentional intellectual effort to understand and improve our capacity and skill in making any judgements, especially design judgements.

Again, we should emphasize that we are not talking about making true judgements. Rather, we are talking about treating design as an aesthetic and purposive approach, whereby we make the imagined real, using our ability to make good adequate judgements. Design is about making crucial judgements, ranging from reflexive offhand judgements, to judgements emerging from our core being. It is about an appreciation of the whole and all its systemic relationships. Therefore being more apperceptive in order to understand more about the self-conscious activity of judgement will not interfere with a designer's ability to make good design judgements. It will only help to improve those judgements.

This leaves us, as designers, fully responsible for our judgements and our actions. There is no way of escaping this responsibility. Designers, in relationship with clients, have complete responsibility and accountability for their designs. This is because they have chosen, based on their design judgements, to make a particular conceptual design into a concrete reality without the protective cover of 'true' design. This leads us to believe that good design is possible to achieve through good judgement, as an informed process of intention, and not something gained simply by chance or necessity.

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