

makeThe Role of Theory in Design:
Reflections on *Examining Practical, Everyday Theory Use in Design Research*

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Dear Danah,

Here are a few notes on ideas in this commentary, and on writing style. This is a good piece – and you are a good writer. I am offering this writing advice to help you move from being a good writer to writing well. Writing on academic subjects is difficult. The challenge is that we must be precise at the same time that we should be fluent. The goal of good academic writing is to help readers understand what we understand in a way that allows them to think fruitfully with us.

Good academic writing is a magic trick. Our goal is to seem natural, to create a voice that sounds natural at the same time that our prose is clear and precise. Picasso said, “Art is a lie that tells the truth.” Good academic writing resembles art in this sense – we write in a way that would sound natural to the ear if spoken, yet we never truly speak that way.

Michelangelo supposedly said that the mark of a good statue was that you could roll it down a hill and nothing would break off. I’m not sure if Michelangelo said it. It may not even be true. But it is a good metaphor for elegant writing. Sentences should have no needless words, and paragraphs should have no needless sentences. Prose should be active and clear, so that they move the action of your thinking forward.

Your writing here is a bit stiff and uncertain. Even though you are thinking, you write as though people may not recognize the value of your ideas or the attention you have given to the material. My suggestion is not to be nervous. Polish your sentences. Roll your paragraphs down the hill to see if anything breaks off. Use the grammar functions in Microsoft Word to identify problems – MS Word doesn’t correct well, but it helps to flag problems, and it helps to identify issues depending on your settings. Most important, it will help you to identify and eliminate passive phrases.

Few sentences require passive verbs. Active writing is easier to understand than passive writing. It naturally identifies actors and responsibility, and it drives the action of the text forward. It preserves the natural structure of time, and this in itself helps readers to follow the action.

It may be odd to think of a scholarly article as having action, but they do. Good writing has a dramatic arc. To the degree that you can do so, it is important to find the dramatic arc even in theoretical articles. Along with these notes, I am attaching two articles on theory. They are well written and worth reading for the style. The topic can be abstract at some points, so they may not carry as much drama as other kinds of articles, but you can see that the authors keep them as active and lively as possible.

If you'd like to read a helpful book on excellent academic writing, read *Stylish Academic Writing* by Helen Sword:

<http://www.amazon.com/Stylish-Academic-Writing-Helen-Sword/dp/0674064488/>

If you'd like to see a great example of an elegant writer who develops challenging theoretical concepts in clear prose, try Clifford Geertz's best-known book, *The Interpretation of Cultures*:

<http://www.amazon.com/Interpretation-Cultures-Basic-Books-Classics/dp/0465097197/>

One of my favorite writers for pure, elegant style is Gordon Wood, the historian. A collection of his book reviews demonstrates how a great mind looks into the work of other important thinkers -- *The Purpose of the Past: Reflections on the Uses of History*. These essays are short and highly readable:

<http://www.amazon.com/Purpose-Past-Reflections-Uses-History/dp/0143115049/>

If American history interests you, read Woods's *Radicalism of the American Revolution*.

<http://www.amazon.com/Radicalism-American-Revolution-Gordon-Wood/dp/0679736883/>

The beauty of this book is Woods's ability to bring together complex strands of thought, illuminating the past through a careful concentration on selected issues.

Please do not take this note as a statement that your writing is bad. It is not. You are a good writer. You are an assistant professor. You've published a great deal already, publishing as a PhD student. It will soon be time for you to go up for associate professor stays. As a steady publishing author who has also won teaching awards, I expect you'll get to associate professor with no problems. If you don't mind me saying so, your real goal now should be publishing for impact. Good writers are not a majority among scholars, but we have them. Bad academic writing is so common that people don't always realize the truth of the clichés – they just skim, digest, and move on from one forgettable article to the next. The next step is serious, decent articles. They are worth reading. They aren't painful. But we don't recall them – they do not have impact. Even a decent Google Scholar count is not decisive – the academic game requires us to cite other authors, so decent articles show up. You're already good. Your thinking deserves stronger writing. That means moving from good writing to the excellent writing.

With this in mind, I'm looking at your article as an editor would – not a journal editor, but an editor at a good publishing firm.

Let me give you one more wonderful example of good scholarly writing -- beautiful writing, in fact. This is Rebecca Goldstein's book on Kurt Gödel. This is a challenging book on a difficult topic. Goldstein makes it beautiful and readable. Goldstein is both a professor of philosophy and a novelist who was a MacArthur Fellow. Beautiful writing and serious scholarship can go together.

<http://www.amazon.com/Incompleteness-Proof-Paradox-Gödel-Discoveries/dp/0393327604/>

Now is the time to make the next step in your writing.

As Jin wrote, there is no problem if you exceed the 1,000-word limit to make these ideas work. The only thing I am suggesting is to waste no words – make every word readable, and make every word count.

Warm wishes,

Ken

DH: It is an honor to be asked to provide commentary on this article, *Examining Practical, Everyday Theory Use in Design Research*, as it is a unique opportunity to comment on work that seeks to investigate something so fundamental to design scholarship—the use of theory.

KF: There is no need to comment on the fact that we invited you to write the comment. It's best to get right to the case. For example,

—snip—

“Examining Practical, Everyday Theory Use in Design Research” offers an opportunity to comment on an issue that is fundamental to design scholarship—the use of theory.

—snip—

Also, note that book titles and complete works take italics. Article titles use quotation marks. Be frugal with superlatives unless you need them. Is this opportunity truly unique?

DH: Design has had a somewhat complicated relationship with theory. Historically design has had a relationship to craft and a focus on doing (and in certain cases, experimentation). As the study of design has moved into academia, and into what Friedman (2003) has called “reasoned inquiry” there has been a move towards developing a theory (or theories) of design. The value of theory in making a field systematic cannot be overstated. Thus as the field of design seeks to become better structured, it is important that there is emphasis on how design theory is articulated and actually utilized in the process of design research.

This article engages in an attempt to analyze and understand the possible uses of and approaches to theory in design research. In this, it takes an important step into understanding the theoretical underpinnings of design as practice and scholarship. As the authors point out, others (Friedman, 2003; Love, 2000; Weick, 1989, 1995) have also ventured into important meta-level considerations of theory, to develop and expand our understanding of scholarly and practitioner work in design. The focus in this article enters into a broadly-applicable, yet underrepresented area of theory-examination, in looking across common themes that characterize how scholars *actually use* theory in design. In academia, theory often operates as a given or absolute, an unquestioned abstraction that we recognize as the guidepost for our work, but that is often left unexplored in how it manifests in the everyday work of scholars. Thus the authors do an important service to the field in engaging in this discussion. It is clearly one of foundational importance if scholarly design work is to develop a certain “meta-cognition,” about how we work, think, and develop or share knowledge.

KF: These two paragraphs contain 285 words in 12 sentences. While 20% of the sentences in the first paragraph are passive, this changes to 8% in the whole sample. These are long sentences, with an average of 23 words. The Flesch Reading Ease is 26, the Flesch-Kincaid Grade Level is 12. You can learn this by using the readability statistics measure in MSWord. But MS Word doesn't tell the full story. It only gives rudimentary readability statistics.

If you go this specialized readability testing site, you can study your writing in greater depth:

<http://www.readabilityformulas.com/freetests/six-readability-formulas.php>

You will see the score shows far greater difficulty, both on Flesch-Kincaid (17.8) college graduate and above, Flesch Reading Ease (34.1) - Difficult to Read, and the Gunning Fog Index (17.4) Difficult to Read.

You should check the Gunning Fog Index

<http://www.readabilityformulas.com/gunning-fog-readability-formula.php>

The key issue is readability. Serious formal prose in high quality sources come in at a far lower score than your prose. According to the readability formulas test site, "The ideal score for readability with the Fog index is 7 or 8. Anything above 12 is too hard for most people to read. For instance, The Bible, Shakespeare and Mark Twain have Fog Indexes of around 6. The leading magazines, like Time, Newsweek, and the Wall Street Journal average around 11."

Let me try a revised version to show you what you can do:

You will see several shifts. First, I've tightened the sentences. A sentence should state a single clear idea. While it is sometimes more graceful to bring several ideas into a single sentence, you should choose these moments carefully.

Where possible, I delete needless words. Whenever possible, you should eliminate adverbs. While adverbs modify verbs, they do not strengthen them. In most cases, adverbs weaken the intent of the verb, even when the author wants to strengthen the verb. At some points, however, I use additional words to make your meaning clear. Where you write, "and in certain cases, experimentation," you do not seem to mean scientific experiments or systematic experimentation. Instead, you are probably describing the kinds of experimentation common to design – trial and error to see what works. In an article on theory, you should be careful and clear about the kinds of experimentation we see in design.

There is such a thing as rigorous experimentation in design, but this is rare. You see it at some of the few research institutes and research projects that focus on design. This is far less common than the phrase “certain cases” would suggest. If you mean real experimentation, then you should say so – and make what you mean clear.

Avoid the term “academia” unless you are actually referring to academia rather than universities. Design has moved into universities, but not everything in all universities involves academia. This may seem a fussy point – academia is often taken to mean things having to do with education and teaching. But we don’t refer to high schools as academia, and we distinguish university-based design schools from the old-fashioned design schools where people once learned design skills. When we speak of academia, we speak of physics, philosophy, history, or the humanities. It is debatable to suggest that design has moved into academia in this sense.

In the colloquial sense, you can say this. But it is imprecise in an article where you discuss the importance of theory. Theory construction and philosophy of science are immature in design. In my view, only two dozen programs among the several hundred PhD programs in design are robust. In this sense, design has not entered academia. Rather, design schools have been merged into universities or established in universities, or they have sometimes grown out of art departments. They have done so in much the same way as many of the vocational or semi-professional fields that universities now offer. This often has more to do with political decisions or university finances than the difficult and costly work of establish a true university design school. Since you are discussing a central issue in the growth of an academic field, it is helpful to be precise in using the term “academia.”

When you quote an author, the quote should be precise. Readers should not be obliged to read a full article to see how the quoted author uses a short phrase. Every quote should be precise. Direct quoted passages and indirect quotes alike – paraphrases – should identify the pages or pages where the cited source presents them.

When you quote an author, you are quoting the text. This should be active. The text is a current document, even when the author is dead. Therefore, it is best to write, “Friedman calls” rather than “Friedman has called,” or “Plato writes,” rather than “Plato has written.”

There is a difference between the active past tense and the passive voice.

Your original sentence had a passive phrase, “there has been a move towards developing a theory (or theories) of design.” I changed this to “This new context involves developing a theory – or theories – of design.”

This is an editorial choice, but it may not be correct. In making this an active verb, I sought the meaning of the sentence. You can write the most sentences in several ways with the same meaning. But the shading and tone may change, and the nuances may shift. It also may happen that a similar sentence has a very different meaning. Making this sentence active was difficult – it required real work. If I failed to capture your meaning, you may want to change it back to the passive voice. There are sentences that should be passive. They are few, but they exist.

On addition to being stiff and unclear, however, the passive voice permits weasel words. That’s why bureaucrats love the passive voice. “There has been a move” Who is responsible? Even in the rephrase, I wasn’t able to determine who is responsive. It may not be necessary here, since this is a function of the context in which design enters the university.

Every choice in writing requires thought. That’s why it is often difficult to write a good paragraph. This is also why writers struggle.

Samuel Johnson once said, “No man but a blockhead ever wrote except for money.” This applies to women, too. Writing is a pain. It is a struggle. It is true, of course, that professors earn more than instructors, and so the university pays us to be blockheads.

“The value of theory in making a field systematic cannot be overstated.” Take this sentence out and shoot it. The idea is clear. Avoid orotund nineteenth-century phrases such as “cannot be overstated.” If you have something to state, state it! Don’t back into a declaration.

When you clarify the sentence, you will find that something is missing. There may actually be two sentences here. I am not sure. This is an editorial suggestion.

When you work face to face with an editor, you will find that he or she offers you options – you and the editor take sentences apart, you put them back together, you discuss options and the nuances and tone that each option offers.

The choice is yours. You begin to make conscious choices about words, about sentence structure, about paragraphs in a way that is very different from your first drafts.

We can't do this together at a distance, but I can show you what some of the issues involved in these choices might be.

At this point, I think an interim concept might be something like this:

—snip—

“Theory development is a vital step in developing any field. Development requires generating systematic concepts and the understanding that comes with systematic rigor.

—snip—

If the concept finally doesn't work, revise it again. Clarifying a sentence sometimes leads to a new sentence with a clear idea that doesn't work well. This doesn't mean the earlier, unclear sentence was better. It means that a poor sentence made it possible to hide the fact that the idea was not clear and workable. “The value of theory in making a field systematic cannot be overstated” is such a sentence.

In fact, this interim sentence doesn't quite work, so after a bit more struggle, I'm going to try:

—snip—

Developing theory is vital to a mature field. Mature research fields require systematic concepts, rigorous models, and theoretical depth.

—snip—

Once this becomes even clearer, it becomes clear that an issue is missing from the prior passage. This is the fact that you are attempting to describe a research field rather than a field of professional practice. The research in this field involves professional practice, but you are speaking about design as a research field.

Now it is possible to fill in the missing concept:

—snip—

Moving design into the university led, perhaps inevitably, to the development of a new research field. Developing theory is vital to a maturing research field. A mature research field requires systematic concepts, rigorous models, and theoretical depth.

—snip—

Now if you read on to the last sentence, you are talking about research. I know that you know this. But the place to state this to your readers is earlier in the paragraph than the last sentence.

Be careful with misplaced reification in the next sentence. The field of design doesn't "seek" to become anything. People in the field seek. The field itself either becomes better structured or it doesn't.

Now when you begin to discuss the article, mention the authors. You are no longer a blind referee reviewing the work of unknown authors. Now you are commenting on a published article, and you are reading the final article. You should refer specifically to Beck and Stolterman (2016), and – at appropriate points – you should refer to the specific points in the published article. If you don't have the pages, leave a marker where we can enter a page number.

—snip—

This article engages in an attempt to analyze and understand the possible uses of and approaches to theory in design research.

—snip—

This sentence has too many needless words. Instead of "engages in an attempt," use the verb "attempt." There is no need to discuss "possible uses." They discuss uses.

The first time you introduce an author, it is good to use the full name.

What you mean by “meta-cognition” is not clear. I’ve done my best with the last two sentences, but I am not clear about what you want to say.

—snip—

Design has had a complicated relationship with theory. Until recently, design has been linked with craft. The focus of design activity is doing with occasional trial and error experimentation. In recent years, design has moved into the university and it requires what Ken Friedman (2003) calls “reasoned inquiry.” Moving design into the university led, perhaps inevitably, to the development of a new research field. Developing theory is vital to a maturing research field. A mature research field requires systematic concepts, rigorous models, and theoretical depth. As the design field becomes better structured, we see an increasing emphasis on design theory. This involves the way that we articulate design theory – and the way that we use it in the process of design research.

Jordan Beck and Erik Stolterman (2016) attempt to analyze and understand the uses of theory in design research and the different approaches that different authors take. Beck and Stolterman takes an important step toward understanding the theoretical underpinnings of design practice and scholarship. As the authors point out, others (Friedman, 2003; Terence Love, 2000; Karl Weick, 1989, 1995) have examined theory on the meta-level to develop and expand our understanding of research and practice in design. This article examines common themes that characterize how scholars *actually use* theory in design. While this issue has broad application, it is not well represented in the examination of theory. Scholars often describe theory a given construct or an absolute issue. They treat theory as an abstraction that we recognize as a guidepost for our work. Nevertheless, authors rarely ask how theoretical concerns manifest in the everyday work of scholars. Beck and Stolterman authors perform an important service to the design field by opening this discussion. The topic is important for design scholars to develop an appropriate level of meta-cognition of how we work, how we think and develop knowledge – and how we share knowledge.

—snip—

At this point, the text is better, but it still has a way to go.

Flesch-Kincaid has come down from 17.8 to 11.5 -- from college graduate and above to Twelfth Grade. Flesch Reading Ease has improved from 34.1 to 42.7 – it is still difficult to read, but it is better. The Gunning Fog Index has come down from 17.4 to 13.6 – from difficult to read to hard to read.

As you work your way through the entire article, tightening the text, clarifying your writing, and making improvements, you will find ways to go back over earlier passages to clarify them and make them more clear.

Now that I see that the Gunning Fog Index is still too high, I will give it another round of revisions before moving on. I looked for places where I trim needless words, or unclear words – for example, there was no need to use the word “meta-level.” When a text is too complex, it generally means it is not well enough written.

The physicist Richard Feynman was talking with a fellow professor once on a difficult topic. Feynman said that he could explain it in a lecture for freshman physics. His colleague said this was impossible. Feynman went off to write the lecture. A few days later, he returned to say that he couldn't do it. Feynman's colleague said, “I told you this topic was too difficult.” “No,” said Feynman. What this means is that we really don't understand it.”

The work required to simplify is the work you must do to make sure you understand the subject well enough to explain it.

If it isn't right when you simplify it, keep working. Clarification makes conceptual gaps visible. Gaps require more words. New words require editing, trimming, and clarification. It is an iterative process until you finish the text.

Each time I go over the text, I find ways to trim it further. For example, when you write about “in looking across common themes that characterize how scholars actually use theory in design” aren't you able to say, “they examine how scholars actually use theory in design.”

Note – once you make this clear, there is no need for italics. Writing a clear sentence is better than using emphatic italics to emphasize the clear part of an unclear sentence.

—snip—

Design has a complex relationship with theory. For the most part, design is linked with craft. Design activity involves making and doing. While experimentation comes into play, it involves trial and error more often than rigorous research. The new position of the design field as a university discipline now requires what Ken Friedman (2003) calls “reasoned inquiry.” Moving into the university led to the development of design as a research field. This, in turn, requires theory. Research requires systematic concepts, rigorous models, and theoretical depth. As the design field develops a richer conceptual structure, design theory grows in significance. The way that we articulate and use theory in research will be increasingly important to our field.

Jordan Beck and Erik Stolterman (2016) analyze the use of theory in design research. They examine how different authors approach theory. In doing so, they take an important step in understanding the theoretical underpinnings of design. The authors note that others (f.es., Friedman, 2003; Terence Love, 2000; Karl Weick, 1989, 1995) examine theory to develop and expand our understanding of research and practice in design. In this article, they examine how scholars actually use theory in design. Even though this issue has broad application, it is not well represented in literature on theory. Scholars often describe theory as given or even as an absolute reality. They treat theory as an abstraction. While authors recognize theory as a guide to research, they rarely ask how we use theory in the daily work of research. Beck and Stolterman perform an important service by opening this discussion.

—snip—

I’ve trimmed the last sentence entirely. I’m not sure what it adds here. It may be useful to bring it in later.

—snip—

The topic is important for design scholars to develop an appropriate level of meta-cognition of how we work, how we think and develop knowledge – and how we share knowledge.

—snip—

At this point, I've got to stop and send this off. I've tried to show you how to work with writing. This has taken me much of the day.

This would have gone much faster if I had simply been revising the manuscript.

It would have been much faster if we were working together so that I could show you what to do with different passages, ask questions, get your answers, and explain my choices and suggestions.

Doing this in writing takes far longer.

What makes so time-consuming is that I must do four things here – 1) read and revise the text, 2) explain the principles and actions involved in editing and revision, 3) surfacing the different kinds of tacit knowledge that I use to edit and revise, and 4) explaining all these in a clear, coherent way.

At any rate, this is improved. Given the fact that this is a scholarly journal, I'd move on to the next paragraphs at this point, and then review the entire text later. Right now, these two paragraphs are better.

Flesch-Kincaid has come down from 17.8 to 11.5 to 9.3. -- from college graduate and above to Ninth Grade. Flesch Reading Ease has improved from 34.1 to 42.7 to 49.8 – from difficult to read to hard to read. The Gunning Fog Index has come down from 17.4 to 13.6 to 11.5 – from difficult to read to hard to read. Most people can read it now. You'd expect to see this kind of writing in *The Economist* or *Time*.

And here I will stop and send this off.

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At the same time, in any such endeavor, there are issues, gaps, and unresolved tensions within the work that should be noted and engaged. I point to some of these in understanding where they lie within this particular line of work, but also as broader critical considerations for the field, as it continues to strengthen its position as an academic discipline.

One core issue that arises here is the need for more specificity in use of terms and general terminology. This is most notable being the lack of a strong working definition being given for what the authors mean by theory. They state up front that, "in this article our aim is not to

demarcate or define theory. Instead, our aim is to investigate how researchers present their use of theory in written texts.” Yet, this lack of a definition speaks to a broader issue in scholarship, of the need for clear statement of how core concepts are defined on the authors’ terms. This problem of clarity around the object of study complicates things when they explain their analysis of the articles—it is not as clear as it could be what they mean in saying that a certain paper is theory-driven or not. For instance, the authors often use the word “frameworks” as being similar to “theory.” Which may certainly be the case, but since it is never clarified as to how these relate or differ, our understanding remains murky. A similar issue occurs when the authors speak of attempting to develop “models” of how theory plays out in the articles they analyze. But without a clear initial description of the term, it begs the question of how models are different from theories and frameworks? Implicitly we could assume the authors see distinctions in these terms—but this requires more definitive treatment in the text. This point being that some discussion of how these core terms relate could provide further clarity and consistency. Again this issue (of care with usage of core terminology) is a broader issue of scholarship in design and other fields.

There is also a more general issue overhanging the paper, having to do with the fact that for work focused on theory, it is somewhat a-theoretical in nature itself. The authors take on empirical examination of how theory is used in design research, but there does not appear to be a strong theoretical approach framing their own work. In this sense, it would be wonderful to see more discussion of and references to other work or thinking on theory, from areas such as the philosophy of science, social science or others. Including these points would serve to enrich the ideas, provide context, and situate the article within a broader literature and discourse around the philosophy of research.

Finally, there are some concerns with the methodology, and how it is conveyed. A clear and justified methodology provides a rhetorical argument, to convince the reader of due diligence in methods as well as the resulting discussion or findings. Composing a methods section requires a recognition that the readers do not instinctively know the “what” and “whys” of the researchers’ methodological choices, but need explanation, rationale and justification, in order to validate conclusions and stances. The article in question raises a few questions in this area as well.

For instance, the authors note that they engaged in a round of “unmotivated looking” at the texts. But without a methodological rationale or theoretical justification for “unmotivated looking,” the reader might ask if this is a viable or previously justified technique in qualitative or grounded theory work? This even begs the question of whether “unmotivated looking” is even possible!

Similar questions might be asked about aspects of the coding and methods of analysis. One such instance occurs where “no theory” is given as a coding category, when not one example emerged in the study data. Such a categorization choice, particularly in coding processes specifically noted

as emergent and using grounded theory, appears somewhat ad-hoc and unsupported by either data or formal justification.

That is not to say that the authors have not done their work with due diligence, but rather that in places where one can identify gaps or questions, it signals the need for more full and thorough treatment. Anfara, Brown, & Mangione (2002) point to the necessity of thorough details and complete justifications in methods, as the cornerstone of the defensibility of qualitative work. This allows a study's methods to be a strong rhetorical argument supporting what has been done. In broader terms, this suggests that design scholarship benefits by casting a careful eye to issues of methodological rigor, and how it is communicated as an argument that advances the work.

In conclusion, my aim in this commentary has been to speak to the value and potential in the work in this article, but also to use certain points to consider in a broader discussion around these issues. I would like to sincerely thank the authors of this work, along with the editors of this journal, for the opportunity to comment and engage in this discourse. As design research continues to grow as a scholarly field, such engagement with theory in meaning and use is of immense value, and it is a pleasure to be a part of that conversation.

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