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Design Thinking: Dear Don . . .

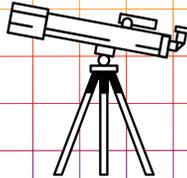
BY BILL MOGGRIDGE - AUG 02, 2010

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. . . this column is a response to your post of June 25th, titled, [Design Thinking: A Useful Myth?](#) I believe in the utility of design thinking,



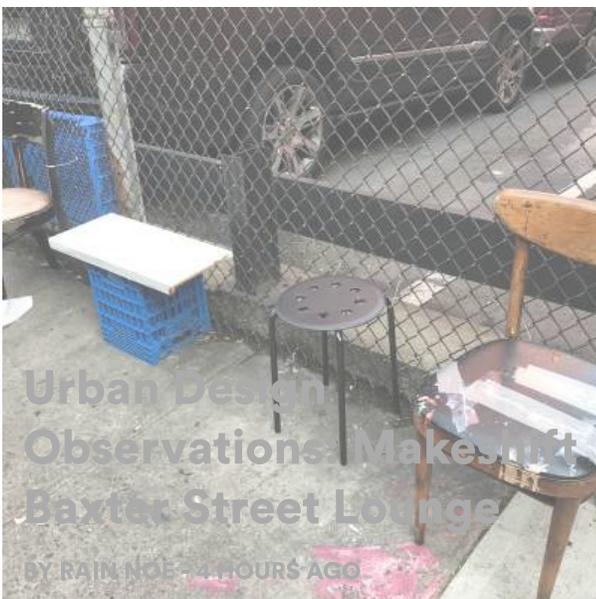
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but reject the idea that it is mythical. Thank you for triggering this rich discussion, with over fifty comments. You always find a way of arguing a case with enough controversy to wake us up and generate responses, but I think your idea of "myth" is in itself only a half-truth.



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Design thinking harnesses the power of intuition. It is a process, evolved gradually by designers of all kinds, which can be applied to create solutions to problems. People of any background can use it, whether or not they think of themselves as designers. It uses the subconscious as well as the conscious mind,



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BY JOEL MOSKOWITZ - 5 HOURS AGO

SKETCHES



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BY RAIN NOE - 6 HOURS AGO



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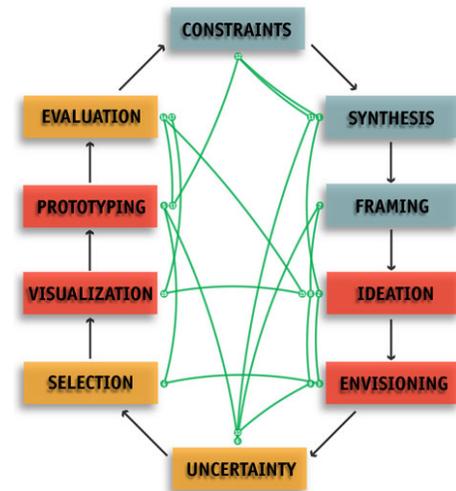
subjective as well as objective thinking, tacit knowledge as well as explicit knowledge, and embraces learning by doing. I like the analogy of an iceberg that has just a little ice above water level, with a vast mass submerged. Rigorous explicit thinking, of the kind encouraged in institutions of higher learning, limits people to conscious thinking and hence to using just a tiny proportion of the potential in their minds - like the ice above the water. The design thinking process allows us to follow our intuition, valuing the sensibilities and insights that are buried in our subconscious - like the ice below the water. This process is capable of generating solutions to complex problems, developing subtle qualities, and helping us move towards better solutions to "wicked problems." If we try to solve these problems with explicit thinking alone, our heads hurt and we are

unable to respond
holistically.

There's more to design than design thinking. As you said in the Epilog to your book "Emotional Design," *"We are all designers. We manipulate the environment, the better to serve our needs. We select what items to own, which to have around us. We build, buy, arrange, and restructure: all this is a form of design. When consciously, deliberately rearranging objects on our desks, the furniture in our living rooms, and the things we keep in our cars, we are designing."* When someone chooses what to wear, how to decorate their home or layout their garden, they are exercising skills of general design awareness. It is about how to choose rather than how to generate new design solutions. Everyone makes design choices, but that doesn't imply that they are fully-fledged designers or design thinkers. People achieve greater sophistication when they become specialist

designers, learning how to design with fluency and expertise. Professional designers know how to create new solutions, based on a synthesis of all the relevant constraints. They have mastered specialist design skills, making them expert at deciding how a design can be formed, and how to create an elegant solution to the problem posed by the constraints. Most design education focuses on teaching these specialist design skills, whether the design discipline is industrial design, interaction design, architecture, graphic design, web design, or more craft based disciplines like ceramic or jewelry design. Designers learn processes that are successful in responding to the subtleties of people's needs and desires. We learn by doing, assembling a rich and intuitive understanding of restraints, knowing how to create alternatives, developing representations and building prototypes,

evaluating solutions and choosing directions, rejecting unsuccessful solutions and trying another cycle of the process.



Here's a diagram that summarizes this iterative approach. The dark arrows show the general tendency to repeat the steps in more than a single iteration, but every project is different, demanding a unique version of the general methodology. The green line shows a specific example, illustrating that each project deserves its own version of the process (You can download a [pdf here](#) that describes the steps, including a credit and photo of you, Don). All of the design disciplines share

a process something like this. It varies somewhat between architecture or industrial design at one end and jewelry or ceramic design at the other, but the main iterative structure is always there. Both logical thinking and intuitive inspirations are essential for successful results in the process, but that is not what we mean when we apply the recently popular "Design Thinking" label. Design Thinking describes the application of this kind of process to challenging problems, usually by teams of people from varied backgrounds, allowing them to benefit from the generative power of the methodology without having to explain it. They can come up with solutions instead of bullet pointed instructions. They can see and feel tangible results, try them out, discover the failings in particular solutions and move on to another better version.

This interdisciplinary design thinking is especially valuable for deciding what to do in the first place, so that the power of intuitive creative processes can be harnessed to stimulate innovation, solve difficult problems and develop new opportunities. Teams can use design thinking to respond to the challenges posed by complex digital technology, systems, services, global connectivity, or the need for social innovation. They can collaborate so that the output from the shared mind is more productive than the sum of individual contributions.

Team members are likely to come from the design disciplines that derive from expertise about people, such as ergonomics, psychology, anthropology, industrial design, interaction design and graphic design. They will also come from the technical design disciplines, such as computer science, materials science,

mechanical and manufacturing engineering. People from non-design disciplines may also contribute to the projects, typically those with business and brand backgrounds, as well as writers, storytellers and prototype developers, for physical, digital and video prototypes.

The "Design Thinking" label is not a myth. It is a description of the application of well-tried design process to new challenges and opportunities, used by people from both design and non-design backgrounds. I welcome the recognition of the term and hope that its use continues to expand and be more universally understood, so that eventually every leader knows how to use design and design thinking for innovation and better results.

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Columns



**BILL
MOGGRIDGE**



Bill Moggridge is the director of the Smithsonian's Cooper-Hewitt, National Design Museum, the only museum in the United States devoted exclusively to historic and contemporary design. Bill designed the first laptop computer, the Grid Compass, launched in 1982. He describes his career as having three phases, first as a designer with projects for clients in ten countries, second as a co-founder of IDEO where he developed design methods for interdisciplinary design teams, and third as...

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19 COMMENTS

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**Jesse
de
Agustin**

Reply · ↑ · ↓

6 years ago

As was mentioned before, the distinction between "thinking about design" and Design thinking are two concepts. In a LinkedIn.com Design Thinking group, I argued that we can think about "design" all we want (. . . think. . . think . . .;) but that doesn't mean we are design thinking. Looks like there is an argument if either design thinking exists, or what we should call it, but if design thinking exists, then design thinking is an action in and of itself. - Jesse



**Bill
Dresselhaus**

Reply · ↑ · ↓

6 years ago

It is interesting that this dialogue between Don and Bill is so nicely civil and polite. I recall that Don, at the International Design Research Conference in Seoul, Korea about a year ago, in his keynote speech to an audience of hundreds, and on tape (you can check it somewhere, I am sure), said that . It would be interesting to get Don's

elaboration on that comment.



Tom Kubilius

Reply · ↑ · ↓

7 years ago

Thanks for the great description, Bill. I think if we get beyond the term 'Design Thinking' as some exclusive thing that we can copyright or some firm can own to the exclusion of others, there is a lot of agreement between the authors and comments. We also need to understand that design thinking or whatever you want to call it, is so different from what is really happening in most companies. As someone who is both an engineer and a designer, I do think there are important 'way of thinking' differences to be noted here. Design thinkers will look at the context for the problem they are defining. Is it the right problem? What are the possibilities? What else about the context is important? Let's create, try experiment and fail a lot before we succeed. A lot of technical and engineering thinking and training is focused on the 'how?' to answer a particular question or problem. How do I solve this particular problem? How do I move most effectively toward this

goal? What is the optimum solution for the given problem? How do I drive the straightest path to the right answer? These kinds of thinking aren't exclusive to engineering and design, but whatever you call these kinds of thinking, they're both necessary to solve big problems. The answers to the 'how?' questions are something many people and companies are used to getting. They are good at measuring them and they have the benefit of appearing to have a correct answer. Unfortunately, all too often the framing of the problem is rushed. It starts as an idea in a conference room, a flash of inspiration by an executive and moves too quickly past the question of 'should we do this?' to 'how do we do this?' I think that's a big part of what Roger Martin has to say about this. It's not that this kind of thinking is superior, or should be the only thing we do. The problem is we're currently so out of whack away from this kind of thinking that there's a real shortage. There's more to do here than hire more designers. This kind of thinking can be applied to a product, a service, a human resource issue, a process or darn near anything. We need to teach the more technical disciplines to

spend more time expanding possibilities, making sure that the problems they're taking on matter, constantly evaluating their work with their audience. They should be iterating, trying and creating--all while building toward using their 'how?' skills to solve the right problems.



Aaron Nelson

Reply · ↑ · ↓

7 years ago

Hmmm. With all due respect, I think Don is right in his response that 'design thinking' is just another (and vague in a different way) term for 'creative thinking.' That being said, I would definitely appreciate a clear distinction that anyone could offer between the two. In my mind, 'design thinking' distinguishes itself with a structure that some could attribute to the design process familiar to industrial designers, architects, and the like. Yet, I think it is possible (and a scenario I've observed working for a design firm that practiced an analogous design methodology) that an unfortunate side-effect of cementing a term like 'design thinking' along with its structural process is the gradual loss of the very attribute (creativity) that

made it successful. This is what happens when you have designers, their collaborators, and their clients relegated to checking boxes off the 'design thinking' check-list (whilst paying royalties of course). Though, I understand, because I too as a designer want to be paid for my creativity and problem solving skills, not just my fashion sense. But I don't think the path will be laid out for us by reducing complex ideas and processes into marketable terms, rather, I'd like to believe the opposite - that a diversity of approaches is what will serve a diversity of designers the best.



Clive Grinyer

Reply · ↑ · ↓

7 years ago

Great response Bill, and thanks from all design thinkers for responding to Don's provocative, and for that reason welcome, comments. I personally agree with Don that the skills and approaches of design thinking can be done by others than designers, so perhaps it is fair to refer to Creative, rather than Design Thinking. However, what is crucial, is the starting point and adherence to a human centric approach, rather

than a purely business, engineering, process or technology approach. The process may look the same to engineers but my experience is that engineering and technology departments have great skills but human empathy and intuitive is a different area of expertise not so often found there. Working as I do deep in technology industries, most of what is developed, even though valuable and innovative in principle, works poorly and at worse is inaccessible to many. Taking a design thinking approach to technology development reduces this problem and often radically reforms technology applications and ideas, as it takes account of human behaviour and acceptance, through the kind intuitive methods that Bill explains or more tangibly, through user research and testing. For me, Design Thinking is not just a nice new idea, it is a vital tool that is critical in insuring that great ideas become successful and not just die in a mire of beta prototypes. Non design thinking development models have just not worked well enough, embracing design thinking and using people who are skillful and experienced in it, i.e designers, is being embraced by every major

company and public sector organisation I work with so for me the challenge is not to discuss whether it works or not but how we can ensure that designers and all involved in the creative process understand and strive to make the world more usable, accessible and successful.



harry krane

Reply · ↑ · ↓

7 years ago

I suspect that Bill Muggridge is on the same wavelength as I. He may be interested that I am attempting to devise an interdisciplinary curriculum in my university. Hope we can meet again.Regards Harry



David Gilmore

Reply · ↑ · ↓

7 years ago

Don, Bill Thanks for adding such depth to this dialogue. However, i think there is huge difference between the label 'design thinking' and the label 'creative thinking". Nothing about the label 'design thinking' says that it is owned by designers, or is the prerogative of designers, but (to me at least) it means a great deal more than just thinking about design.

'Creative thinking' (like creative writing) simply seems to imply thinking about a different kind of thing. 'Design thinking' does not imply thinking about design, it implies a fundamentally different way of thinking (than conventionally happens in product design and engineering). No-one, as far as I can tell, is saying that design thinking is the only kind of thinking required or that the owners of this magic should be treated as gods - rather Bill's argument (and everyone else's too) is that we can all do design thinking, but we need to recognise its value and learn when to use it and when to use something else. The key property of design thinking (as Tim Brown and Bill both make clear) is an openness to expansive thinking, to generating new ideas and most importantly of all, to keeping all these conflicting ideas alive at the same time - in order to see over time what sticks and what what fades. This in stark contrast to the more conventional 'engineering thinking' which seeks to identify the strongest idea at any moment and pursue it. Designers are trained in design thinking and engineers are trained in engineering thinking, but all great product design is a

judicious mix of the two.
And all great designers and
all great engineers are able
to do both.



**Tim
Davis**

Reply · ↑ · ↓

7 years ago

I liked the picture but I wish Bill had designed the article to satisfy me. While his diagram might be labeled "iterative design process" it is but a mere approximation. (Perhaps it is a projection of a 100-dimensional space into a 2-D picture.) Regardless it fails to capture the necessary data to represent design as a concept. Which came first: the chicken, the requirement, the egg, the design?



**Freddy
Oyuela**

Reply · ↑ · ↓

7 years ago

Well, i similar think so is very important take to mind, that the designers must be in contact with market and the people, because we are not time to detect the needs of people otherwise have knowing of the people and the ambient therefore is very important wanted specializations in design whatever be action area.



Ashutosh Rajput Reply · ↑ · ↓

7 years ago

Now, here is the point what i think Bill should try to understand. It is not only the process which Designers only Can think or just related to design people .. Any, very well educated working professional can use this type of thinking, either related to any science professional to event organizer or dancer. We can say, it is actually the process of sub conscious mind, when person is trying to come out from the difficult situation, which is actually not only the process of designers,who use it for solving the problem and designing a product or art, but any engineer or painter or Dancer or Sports Player.. So instead of pointing it as a Design Thinking, someone can use it as a problem solving or analytical thinking. Creative or Systematic approach covers the wide range or can say every state of human being,with relation of finding a path or goal or solution... So the main topic of Don was rather to call it as a Design Thinking, it can be related to any human mental approach for finding Creative or effective solution. After all want to say this, it can be a mental

model of a person who is all time surrounded by Design(can be or can not be). Thinking is developed by experience, situations, factor affecting the situation like what human has developed from thousand of years to now and still developing...



stiven

Reply · ↑ · ↓

7 years ago

Design thinking is nothing more than a better packaged and more sell-able iteration of the same old design process (best manifested in the field of industrial design). Why has it become so popular and broadly inquired upon? Because this new terminology is much more accessible to other disciplines that lack the designers sensibilities. To me, the most important word in the design industry has always been "EMPATHY". Empathy towards the user, the client, environment, technology, industry... and yes of course visual and experiential empathy. Our so called "skills" are just means of manifesting that empathy... Design Thinking is a good guideline, that forces empathy into every area (and person involved) in the development process and therefore produces better

and more holistically appropriate design solutions. It's really very simple.



Terence

Reply · ↑ · ↓

7 years ago

I agree with Don's original article, although I don't think that he was attacking designers or the roots of design thinking. His intention was to bring to light the abuse of the term "design thinking" which is done by a number of profit-chasing design firms in order to create an impression of an aura of superiority. I also agree with Don's comment, that all fields have a lot intuition, subconscious and impulsive decisions. My family has businessmen, academics, writers, musicians, police officers, engineers, pharmacists and scientists, and everybody relies on their intuition. I think the most valuable advantage that designer's have over others is holistic thought and analysis, which is well described in this article. That and having "a set of fresh eyes" is usually all it takes to pull it off.



Adam Sturm

Reply · ↑ · ↓

7 years ago

To me, design is a creative process and, while at times there is order, most of the time inspiration can come from anywhere. I have to admit, my eyes kind of glazed over as I read this article. It seems like Bill is trying to put a creative process into a rigid format, and to me that just doesn't work.



Matt Freeman

Reply · ↑ · ↓

7 years ago

When I was at school, we called this the 'design process' rather than 'design thinking'... the latter sure sounds sexier, but I'm uncertain of the difference. I think we do the design profession a disservice if we try to lay claim to intuition - everybody has it, and everybody uses it, whether they know it or not (by definition!). It's simply too big a territory for any group to claim. It seems like we've answered the question, do designers think in a different way to everyone else? The answer appears to me to be no. So what makes designers different? Skills and experience - like everybody else! Experience gives us the ability to correctly weigh competing design factors and introduce ones we think others have

forgotten about, and skills enable us to sell our design. The bit in between (and I realize I'm ranting now, thank you), the actual design bit, is not unique to the design professions. In my humble opinion, it's the ability to get the right balance between ergonomics, aesthetics, manufacturability, etc., etc. that helps a professional designer get a good result. I don't think anyone reading this would disagree that a professionally designed product is (usually) superior. So why the navel gazing? Surely it's because clients struggle to tell the difference between a quality product and a second-rate one until it's too late. Why is this? That's the question I think we should be focusing on.



Daniel Christadoss

Reply · ↑ · ↓

7 years ago

Bill, this is the approach engineers have used effectively and I do like what you said about the productivity of the shared mind. Touche'



Deepankar Bhattacharyya

Reply · ↑ · ↓

7 years ago

Thank you Bill, I especially liked your clear description of the process used by designers and the differences between it and the now popular understanding of 'design thinking'. When 'design thinking' is used to clarify problem areas and identifies what needs to be done, then problem solving becomes an activity where designers and other stakeholders begin to speak the same language and are better able to work together toward common ends. The processes that designers use require training and practice and become integrated into the methodologies of individual designers, who develop highly individualistic styles of working and are therefore able to access solutions that are original and creative. I do not think that this can be done by teams using 'design thinking'. I wonder whether designers should laugh or cry when their terminology is used to describe an approximation of the processes they use and gets adapted for the use of teams working on problems, especially when they know that it can only ever be an approximation. Now that the term 'Design Thinking' has been hijacked, designers are once again left to explain

what it is that they do that makes them so unique, so individualistic, so, dare I say, creative. Or has that become unfashionable?



Don Norman

Reply · ↑ · ↓

7 years ago

Thank you Bill for your informed comment. I agree and I disagree. You provided a rich description of the thinking process used in the design process. I have no disagreements with the description, nor for the very lovely excerpt from your very lovely book. My argument, however, is that the important components of this process are not restricted to designers, a point you must agree with, for you stated "People of any background can use it, whether or not they think of themselves as designers." That's my point: it is a powerful method for generating creative ideas, one that has long been used in a wider variety of areas: art, literature, dance, music, engineering, the sciences, and of course, design. The details vary a bit with the discipline, but the essence is the same. So why call it design thinking? Why not simply creative thinking? Why? Because it is useful for the design community to demonstrate

that good design is more than styling. Now, while I am at it, let me put on my hat as a psychologist and take mild disagreement with one of your other statements, namely that one thing special about this mode of thought is that it uses both the conscious and subconscious mind. No, that is wrong. Most of our thinking is subconscious, and this applies for everyone, even when it is a logic-following, problem driven, intensely focused engineer. No, using the subconscious is not a special feature of what is being called design thinking. Perhaps you are thinking of the traditional (but very oversimplified) discussion of the difference between left- and right-brained thinking. Or as I prefer to think of it, as the difference between analytical, focused, logical thought and holistic, emotional thought. Design thinking requires the right brain, the part that is holistic, emotional, inspired. (But it also requires the left-brain to evaluate and refine those right-brain ideas. As Dan Pink put it in his book "A whole new mind," we need the whole mind, left and right. Thanks for the detailed exposition of thinking. It is only through discussion like this that we

can move design forward. I sometimes think that design does not examine itself critically enough: critical examination is how fields flourish and advance. Thanks for contributing. (And when you finish with the Smithsonian, come back to California: we miss you.)



Christopher Ireland Reply · ↑ · ↓

7 years ago

brilliant, as always Bill, and your gift for subtly makes me smile.



Anonymous4now ↑ · ↓

7 years ago

This posts reeks of analytical nonsense in an attempt to package design thinking and turn it into a producible.

Continued Reading

COLUMNS

COLUMNS

COLUMNS

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BY DON NORMAN - JUL 28, 2010

BY MATT BROWN - JUL 19, 2010

BY VENESSA MIEMIS - JUL 01, 2010

BY INGRID FETELL - JUN 29, 2010

Why Design Contests Are Bad

Every year the world holds many contests for industrial designers. Lots of submissions, lots of time spent by jurors reviewing them, lots of pretty pictures afterwards. Fun to read, wonderful for the winners. What's the problem? I have been a juror for a number of contests, including the major American yearly...

Design Fancy: Judi Alewife, Thrift Store Queen

Judi Alewife is a designer/human from Toronto, Canada. Throughout her career, she's been known as "the scoundrel's designer" and "the thrift store queen." She's never worked for anyone else, and she's never set the price on a single item that she's designed. Instead, she makes things, then donates the

How Can Futures Thinking Amplify Design Thinking?

The business world has been quick to try and implement design thinking in hopes of stimulating sweeping organization change and innovation, only to abandon it and return to old practices when it doesn't "work." Is design thinking nothing more than a poorly defined gimmick, or are people

To Change Hearts and Minds...Change Their Chair!

If you want to convince someone about something, you'd better give them a soft seat. This is one design implication coming out of a surprising new set of studies that examines the relationship between our sense of touch and our attitudes and decisions. The studies looked at the unconscious

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Jessica Yiu

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