The Design of Everyday Things by Don Norman

Book Summary

- Norman opens this excellent treatise on design with a deceptively simple message. That "we have to accept human behaviour the way it is, not the way we wish to be". It's simple, yet powerful, and his thoughts on good design (and how it can be achieved) all stem from this core axiom. The behavioural insights movement is similar in that it looks for opportunities to design choice environments for individuals in ways that flow with, rather than against, their actual psychology of decision-making. To make things EAST (Easy, Attractive, Salient and Timely – UK Behavioural Insights Team).

- When we use something, we often face two gulfs: one of execution (how does the thing work) and one of evaluation (to figure our what happened). It is the role of the designer to help people bridge these two gulfs, and in order to do so, Norman discusses how important it is for the designer to understand the seven stages of action from the users point of view. Most behaviour does not require going through all stages, however most activities will not be satisfied by single actions.

- Norman's seven stages begin by us forming our goal (1), followed by a plan of what action we are going to take (2) and what the action sequence will be (3). We then perform the action (4) and interpret the consequence of our action through the state of the world post-action (5). In order for us to continue, we need to interpret this perception (6) in order to compare the outcome to our initial goal (7).

- The first thing we need to do when we're introduced to a new physical object, is to determine our relationship with it. Norman refers to this as the affordance, and gives us the example of a chair, which affords ("is for") support and, therefore, affords sitting. Next is the signifier, which communicates where the action should take place. Good communication of the purpose, structure, and operation of the device to the people who use it, is a necessary (but not sufficient) condition of good design. Whereas

affordances may be perceivable, signifiers must be, else they fail to function.

- The next concept we are introduced to is mapping, which covers the layout of control and design. Following this, Norman discusses our conceptual models (for objects), and how different people may hold different mental models for the same item. As we cannot talk to the designer, we rely upon whatever information is available to us, and the combined information available to us is the system image. Designers expect the user's model to be identical to the design model, but because designers cannot communicate directly with users, the entire burden of communication is on the system image and for user feedback to be effective, it must be immediate. Poor feedback can actually be worse than no feedback. It needs to be planned and prioritised, so that unimportant information is presented in an unobtrusive fashion (but important information is presented in a way that does capture attention).

- Norman positions conceptual models are a form of story, resulting from our predisposition to find and have explanations (to assign cause and effect to things we do and more importantly don't do). Stories resonate with our experiences and provide examples of new instances. This is lacking in the healthcare industry though. Patients do not have an appropriate conceptual model to interpret and communicate medical information to their physician or to elicit the appropriate facts when making a decision about their health. We need to develop a way for patients to tell stories to themselves about their health; a type of narrative medicine.

- An excellent point Norman makes is that we have a tendency to blame ourselves when we cannot use an everyday item (especially if others are able to use it). Suppose the fault really lies in the device/process/system, so that lots of people have the same problems. Because everyone perceives the fault to be his or her own, nobody wants to admit to having trouble. This creates a "conspiracy of silence", where feelings of guilt and helplessness among people are kept hidden. The phenomenon called "learned helplessness" might explain the self-blame. This refers to the situation in which we experience repeated failure at a task, and as a result

of this repeated failure, we decide that the task cannot be done (at least not by us) and we stop trying.

- As such, Norman advise designers to remember not to blame people when they fail to use their products properly; to take peoples difficulties as signifiers of where the product can be improved; to eliminate all error messages and provide help and guidance; and to make it possible to correct problems directly from the help and guidance (to not impede any attempt to progress). This is followed by the seven fundamental principles of design which Norman has developed, refined and tested over many decades:

    1. **Discoverability:** it is possible to discover what actions are possible and the current state of the device.

    2. **Feedback:** there is full and continuous information about the results of actions and the current state of the product of service.

    3. **Conceptual Model:** the design projects all of the information needed to create a good conceptual model of the system, leading to understanding and a feeling of control.

    4. **Affordances:** the proper affordances exist to make the desired action possible.

    5. **Signifiers:** effective use of signifiers ensures discoverability and the the feedback is well communicated and timely.

    6. **Mappings:** the relationship between the controls and their actions follows the principles of good mapping, enhanced as much as possible through spatial layout and temporal contiguity.

    7. **Constraints:** providing physical, logical, semantic, and cultural constraints guides actions and eases interpretation.

- Good design requires that we treat all failures in the same way. That we systematically and rigorously conduct root cause analysis (asking why until

the ultimate fundamental cause of the activity is reached) to find the fundamental causes of the failure, enabling us to redesign the system so that these can no longer lead to problems. It is not possible to eliminate human error if we think about it as a personal failure and a sign of poor design of procedures or equipment. Though people are sometimes at fault, we cannot justify the attitude that presumes that this is always the case (that WE are the problem).

- Reporting error is often made difficult by social pressures in the workplace (we do not want to admit that we, or others, made a mistake for fear of punishment, being litigated against, etc.). We need to make it easier to report errors, for the goal is not to punish, but to determine how it occurred and change things so that it does not occur again. We can't eliminate errors until we know what they are. What we need to do is to reframe error as an opportunity to learn and develop; to improve things for others going forward.

- In the closing pages, Norman discusses something that is of extreme relevance in our ever more technologically integrated and enabled world; that almost no equipment today is designed to support the numerous interruptions that so many situations entail (receiving a call or a text message while in a meeting, someone "desk-dropping" by your cubicle, getting a snapchat notification when you're entertaining friends, etc.). This is the greatest challenge design faces. Nudging users to fully engage and focus on the activity at hand while they are bombarded with distractions and the lure of quick rewards and gratification.

- Good solutions begin, end and are based on the individual, and how they engage with the world. Human centred design is simply essential and Norman delves into one particular approach to emphasise its importance. The "double diamond model of design" starts by questioning the problem, then expanding the scope of it, diverging to examine all the fundamental issues that underlie it. We should then hope to converge upon a single problem statement. During the solution phase, we should expand our space of possible solutions, enabling a divergent phase, before we converge upon a proposed solution.

- A simple but powerful tip that Norman concludes with, is that procedures should be designed so that the initial steps are as dissimilar as possible. If they are, the processes steps are much more salient to us and we (the user) will have a much greater likelihood to follow the designer's intended steps.

- This book is much more than a guide to good design. It is a treatise of how we should, and need to, think about how we solve our societal problems. Designing with end user in mind, quickly and effectively eliciting user feedback, and conducting rigorous root-cause analysis are but three simple ways in which we can truly understand the problem at hand and what needs to change, and be redesigned to solve the issue.