Who listens to safety instructions anyway?

We humans act far less rationally than we like to think.
As technical writers, we need to speak to the instinctive, emotional side of our readers.
Here is what we can learn from behavioral economics.

Text by Marco Jänicke

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Have you been nudged to do something today? Chances are, you have. Simply speaking, a nudge is a gentle impulse that influences the decisions we make. I am hopeful that this article will act as a nudge. To give you some examples, think of a driver who is prompted to slow down by speed bumps painted onto the road. Or a smoker who is reminded of the consequences of his action with a smoking zone in the shape of a coffin (Figure 1).

What do these examples have in common? One can speed over painted speed bumps and smoke as much as he wants in a coffin-shaped smoking area without any actual consequences. Instead, these nudges are designed to influence our behavior.

In 2008, the U.S. economist Richard Thaler and the legal scholar Cass Sunstein presented nudging in the entertaining and informative book Nudge: The Gentle Way to Improve Decisions. According to this, a nudge is the gentle guidance of individual decisions with the characteristics shown in Table 1.

All other action triggers are forms of manipulation called "sludges", "evil nudges", or "dark patterns" in specialist literature. The advertising industry knows these very well.

The basis for any kind of action trigger is behavioral economics. Behavioral economics is a model that helps to explain real human behavior based on biases and heuristics in decision-making situations and how to use these for a decision architecture.

In their book, Thaler and Sunstein crack open some of the mechanisms of behavior. Such behavioral mechanisms can be found in an immense number of offline and online publications. These four small examples illustrate such biases and heuristics:

Figure 1: Nudges in everyday life *Sources: https://inudgeyou.com, https://m.blog.naver.com*

Anchor effect: You visit a good restaurant with your customers. With the most expensive bottle of wine listed at €280, the bottle for €60 appears to be reasonably priced.

Overestimating yourself: As many surveys have shown, 90% of drivers think they are above-average drivers – a contradiction in itself, as only 50% can be above-average drivers.

Salience bias: Our attention is automatically drawn to salient content, such as highlighted text or cookie banners.

Confirmation bias: We tend to choose what confirms our beliefs and corresponds to our (biased) experiences.

Homo economicus and homo sapiens

Thaler and Sunstein distinguish between homo economicus and homo sapiens.

Homo economicus is purely rational. He decides on the basis of all available information; if this is not sufficiently available, he works with probabilities. A sentence spoken by Mr. Spock hits the nail on the head: "... with a probability of 76%, we will all die when rescuing the away team."

Homo sapiens, on the other hand, is subject to judgment biases and heuristics. We humans do not always act rationally. In fact, we are far less rational than we think. We think we are in charge when, in fact, this very thought itself is a distortion of judgment.

Two different systems characterize our cognitive processing (see Table 2): the automatic system and the reflective system. The automatic system works quickly and instinctively: We duck when a ball comes flying at us unexpectedly. We use the reflective system to decide, for example, on a structuring method in our new CCMS.

				
…must leave a choice.	…must be transparent.	…must not be misleading	…must be to the individual's advantage from a rational point of view.	…must be to everyone's advantage from a rational point of view.

Table 1: Properties of a nudge

Automatic system		Reflective system
Uncontrolled	⟷	Controlled
Effortless		Strained
Associated (Linked)		Deductive (Derived)
Fast		Slow
Unconscious		Conscious
Learned		Regulated

Table 2: Our cognitive processing systems

Figure 2: A nudge to trigger positive decisions
Source: https://commons.wikimedia.org

The vast majority of our decisions are guided by our automatic system. And this is where nudging comes in. With a simple nudge, we lead the decision-maker in a direction that is advantageous for them without depriving them of their freedom to make decisions.

Nudging strategies

To avoid unfavorable decisions due to judgment biases and assumptions, there are nudging strategies and combinations. With a nudge, we help guide individuals to make the decision that homo economicus would make. Here are some examples:

Defaults: Get the user to save paper by having a standard ticked checkbox for double-sided printing.
Simplification: Make forms user-friendly and simple.
Social norms: Encourage conservation by informing gas consumers that their neighbors use less gas than they do.
Simplicity: Make the best option the most accessible one.
Disclosure: Electricity suppliers inform customers about their current consumption and cost in order to support economical consumption.
Warnings: From deterrent notices on cigarette packs to classic safety labels, we find warnings everywhere. In fact, we have been using this type of nudging so much that it has become a toothless tiger.
Self-commitment: People have a hard time sticking to the goals they have set for themselves. Disclosure of goals supports self-commitment.
Reminders: Complementing a simple reminder with social norms is far more effective than a reminder alone. For example, taxpayers were asked to submit their tax returns with a reminder that 80% of their neighbors had already done so.
Will to execute: People are more inclined to act when a social convention is implied. For example, a sticker in a public restroom asking "Did your neighbor wash their hands?" might be more effective than a sticker reading "Hands washed?"
Consequence: The picture of a coffin in the smoking area reminds smokers of the consequences.

Dependence on the situation and person

A nudge provides people with information to incentivize positive results. In the example shown in Figure 2, the positive result of losing calories step by step is achieved through consistency and disclosure. Does it work for everyone? Not at all, as we know from our "industry's own" nudging strategy, the warning. Nudges depend on the situation (place, time of day, time pressure, etc.) and the person (age, character, preferences, etc.). In a gym, the nudge to choose the stairs rather than the escalator could work well. In a train station, on the other hand, where people are in a hurry and carrying luggage, this nudge is less likely to be successful.

Tool	Governments	Technical Communication
Carrot	Subsidies	Gamification, storytelling, utility, films, screencasts, VR, AR
Stick	Law and order	"...use only original spare parts, otherwise..."
Enlightenment	Flyers, websites, portals, databases, advertisements	Safety instructions and warnings
new:		
Nudging	Defaults, simplify access	Defaults, availability (CDP), simplicity

Table 3: Toolbox and examples for nudging decisions

Governments use nudges to influence the behavior of their citizens. Perhaps we as technical communicators can be inspired by their toolbox (Table 3).

Nudging for tech writers

A survey of almost 1000 people from different companies on the use of protective devices on machines gave sobering results. Thirty-seven percent of the guards had been permanently or temporarily tampered with, 80% of respondents did not feel unsafe, half saw the tampering as uncritical, 29% felt brave working on machines that had been tampered with, 33% felt guards were chicanery, and 5% did not even know they were working on machines that had been tampered with in the first place. [2]

This is where biases and heuristics such as overestimating ourselves, peer pressure, convenience, underestimating consequences, and our inner daredevil come into play. Manufacturers and we as technical writers respond with rational information: safety and warning labels, safety signs, and user information in general. But, as the survey shows, users act irrationally... and this is only human. So how about some instructive nudges? Figures 3 and 4 show two small examples. Our role here is limited, as we can usually only nudge in instructive texts and illustrations, for example with labels and safety signs. Product design and UI have a much larger potential for nudging, but unfortunately for most of us, this is out of our hands.

Figure 3 shows a very technical example: a chuck guard on a machine. If the chuck guard is closed, the user sees a smiling emoji; if the guard is open, a worried emoji. This is a subtle and emotional warning that is also visible when the guard is open. Not only is this a reminder to close the guard, but personifying this information also implies a social norm.

Figure 4 shows an instructive example, a warning against property damage. Mixing different lubricants can have very unpleasant consequences: With a little bad luck it only flakes a little; with a lot of bad luck it can damage the equipment. The nudging strategies here are consistency and disclosure, and the properties for nudges as shown in Table 1 are met.

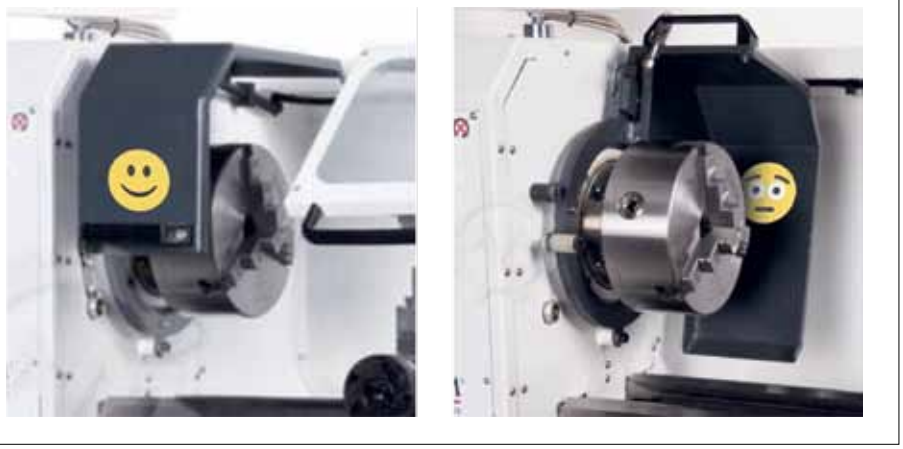

Figure 3: Nudge on a protective device *Source (adapted): www.maschinensucher.de*

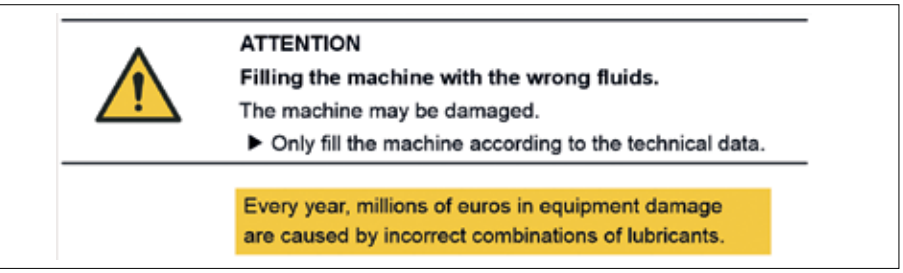

Figure 4: Property damage note as a highlighted nudge

From tech writer to decision architect

If we as technical communicators are aware of the mechanisms of behavioral economics with its biases and heuristics and understand how our users come to decisions, we can develop information for homo sapiens rather than for homo economicus. That way, we can proudly call ourselves "decision architects" as users will make their decisions based on the information architecture we provide.

References:

[1] Thaler, Richard; Sunstein Cass (2021): Nudge: The Gentle Way to Improve Decisions, Yale University Press; The Final Edition, 2021.

[2] "Manipulation of protective devices on machines", DGUV, 2006, Sankt Augustin https://publikationen.dguv.de/widgets/pdf/download/article/1886

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