ARTICLE

# If it's easy to read, it's easy to do, pretty, good, and true

**Hyunjin Song** and **Norbert Schwarz** describe some fascinating findings on how fluency affects judgement, choice and processing style

**Thinking can feel easy or difficult. But what effect does the ease or difficulty of reading a text have on information processing? Can something as seemingly irrelevant as the print font in which information is presented influence how information is evaluated, or even whether it is accepted as true or false? What are the practical implications for everyday life?**

questions

What is the likely role of metacognitive feelings of ease and difficulty in your own field of psychology?

What are the implications for teaching, counselling, advertising, health education, and political communication?

What do these influences imply for the rationality of human judgement?

resources

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Suppose you ponder whether a new exercise routine is suitable for you or whether a statement like 'Orsono is a city in Chile' is true or false. What would your decision be based on? Most psychological theories suggest that you would consider the nature of the exercise or draw on your knowledge about geography to arrive at an informed decision. Surely, you wouldn't base your judgement on the print font in which the material is presented – or would you?

Surprisingly, recent experimental research shows that the print font can exert a profound influence on such decisions. This is the case because print fonts and related variables influence how fluently new information can be processed. The resulting feeling of ease or difficulty, in turn, informs a wide variety of judgements, from judgements of effort to judgements of familiarity, truth, risk and beauty (for a review see Schwarz et al., 2009). We illustrate some of these effects, discuss their applied implications, and note parallels between people's reliance on the metacognitive feelings of ease and difficulty and their reliance on moods and emotions as sources of information (Schwarz & Clore, 2007).

## Effort and choice

When we consider adopting new behaviours, we often try to assess how much effort they will require. Will this new exercise routine be a pain? Will this recipe be easy to prepare? Not surprisingly, complex exercise routines and recipes will seem more effortful than less complex ones, but minor irrelevant features can easily lead us astray in our effort estimates.

For example, consider the identical exercise instructions shown (in part) in Figure 1. When they were presented in an easy-to-read print font (Arial), readers assumed that the exercise would take 8.2 minutes to complete; but when they were presented in a difficult-to-read print font, readers assumed it would take nearly twice as long, a full 15.1 minutes (Song & Schwarz, 2008b). They also thought that the exercise would flow quite naturally when the font was easy to read, but feared that it would drag on when it was difficult to read. Given these impressions, they were more willing to incorporate the exercise into their daily routine when it was presented in an easy-to-read font. Quite clearly, people misread the difficulty of reading the exercise instructions as indicative of the difficulty involved in doing the exercise. If we want people to adopt a new behaviour, it is therefore important that instructions are not only semantically clear and easy to follow, but also visually easy to read – or else the behaviour may seem unduly demanding.

Similar results were obtained when people read a recipe for a Japanese lunch roll (Song & Schwarz, 2008b). When the identical recipe was presented in the elegant but difficult-to-read Mistral font, they assumed that it would require more time and more skill than when it was presented in the easy-to-read Arial font. Hence, it may be advantageous for restaurants to describe their dishes in a difficult-to-read font, which conveys that their preparation requires considerable skill and effort – but the same font may discourage the hobby cook from trying the recipe at home.

Other research showed that the print font can influence whether people make any decision at all or defer the decision to a later time. Not surprisingly, people are more likely to postpone a decision the harder it is to make (for a review see Novemsky et al., 2007). In most cases, the difficulty arises from characteristics of the

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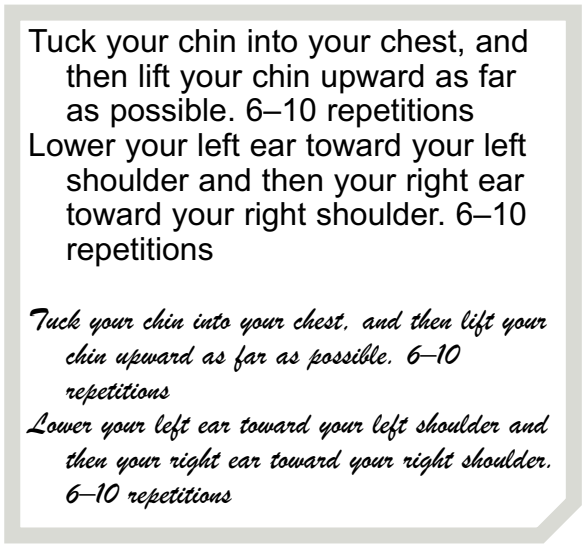


**Figure 1. People mistakenly interpret the difficulty of reading exercise instructions as indicative of the difficulty involved in doing the exercise**

choice situation, like difficult trade-offs between price and quality or the sheer number of similar choice alternatives. However, the same inclination to defer choice can be observed when the experienced difficulty arises merely from the print font in which the choice alternatives are described. Novemsky and colleagues (2007) presented the same information about two cordless phones in easy- or difficult-to-read fonts. They observed that 17 per cent of their participants postponed choice when the font was easy to read, whereas 41 per cent did so when the font was difficult to read. Apparently, participants misread the difficulty arising from the print font as reflecting the difficulty of making a choice. Supporting this interpretation, the effect was eliminated when the experimenter stated the obvious: 'This may be difficult to read because of the print font.' In this case, deferral dropped from 41 per cent to 16 per cent, wiping out the difference between the two fonts.

In combination, these findings highlight that people are sensitive to their feelings of ease or difficulty, but insensitive to where these feelings come from. As a result, they misattribute the experienced ease or difficulty to whatever is in the focus of their attention. Hence, they decide to defer choice, or to avoid an exercise routine, simply because the print font makes the information difficult to process. Once their attention is drawn to the print font, facilitating a correct attribution, these effects are no longer observed. This finding parallels the observation that people draw on their moods as a source of information unless their attention is drawn to the incidental nature of their current feelings (e.g. Schwarz & Clore, 1983).

## Familiarity and risk

In addition to providing information about effort, the fluency with which a stimulus can be processed also provides information about the familiarity of the stimulus. Familiar stimuli are indeed easier to process, recognise and remember than unfamiliar stimuli. But not everything that is easy to process is also familiar – in some cases, it is only easy to process because it is presented in an easy-to-read print font or with good figure–ground contrast. As already seen, however, people are more sensitive to their feelings of ease or difficulty than to where those feelings come from and hence infer familiarity whenever a stimulus is easy to process. This fluency–familiarity link is at the heart of many fluency effects, including the influence of fluency on judgements of risk.

It is not surprising that familiar options feel safer than unfamiliar ones. In grocery aisles, we often prefer the same familiar vegetables over less familiar exotic ones because we do not want to run the risk of picking one with a strange taste or unknown allergens. Similarly, people perceive technologies, investments and leisure activities as less risky the more familiar they are with them. But does this observation really reflect the influence of mere familiarity or does extended exposure to a potential threat desensitise people to the risks involved? To address this issue, we took advantage of the well-established fluency–familiarity link. Given that fluently processed stimuli



**People perceive technologies, investments, leisure activities, even vegetables, as less risky the more familiar they are with them**

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seem more familiar, they should also be perceived as less threatening and less risky.

Empirically this is the case (Song & Schwarz, 2009). In one study, participants perceived ostensible food additives with hard-to-pronounce names (e.g. Hnegripitrom) as more harmful than food additives with easy-to-pronounce names (e.g. Magnalroxate). In addition, the food additives with difficult names were perceived as more novel than the ones with easy names, and perceived novelty mediated the influence of ease of pronunciation on perceived risk.

Given that none of our participants could know anything about these ostensible food additives (after all, we made up the names), this finding provided first evidence that perceived familiarity, by itself, influences perceptions of risk. Moreover, this influence is not limited to the perception of negative risks, as in the case of food additives, but can also be observed in the perception of risks that people consider desirable. For instance, people may want to take risky amusement park rides to enjoy the feeling of excitement and adventure. Would their choice be influenced by the ease or difficulty with which the names of the amusement park rides can be pronounced? The answer is a clear 'yes' (Song & Schwarz, 2009). Participants perceived rides with difficult-to-pronounce names (e.g. Tsiischili) as more exciting and adventurous than rides with easy-to-pronounce names (e.g. Chunta). Other participants, however, were asked how likely the rides would make them feel sick – and once again, the rides with difficult-to-pronounce names won. Throughout, the ease with which the names of stimuli could be pronounced influenced their perceived familiarity. This perceived familiarity, in turn, influenced how risky the stimuli seemed, no matter if the risk was desirable or undesirable.

Similar observations have been made in a real-world domain with high stakes: people's investments in the stock market. Analysing the performance of initial public offerings on the New York Stock Exchange, Alter and Oppenheimer (2006) found that companies with easy-to-pronounce ticker symbols (e.g. KAR) performed better than companies with difficult-to-pronounce ticker symbols (RDO). Investing $1000 in a basket of stocks with fluent ticker symbols would have yielded an excess profit of $85.35 over a basket with disfluent ticker symbols on the first day of trading. This advantage dropped to a still impressive $20.25 by the end of the first year of trading, as more diagnostic information about the companies became available.



**Participants perceived rides with difficult-to-pronounce names as more exciting and adventurous than rides with easy-to-pronounce names**

Presumably, investment opportunities with easy-to-pronounce ticker symbols seemed less risky, giving them an advantage in initial public offerings.

The observed link between fluency, familiarity and risk perception has many important practical implications. In certain product domains, like insurance and food, safety is highly valued. Hence, marketers may want to give these products easy-to-pronounce names and may want to present the product information in ways that facilitate easy processing. In other domains, however, risk is valued. For instance, sports like bungee jumping, parachuting or hang gliding derive their excitement from the risks involved. In such cases, difficult-to-pronounce names and hard-to-process descriptions may highlight the promise of adventure and excitement. Similarly, policy makers may want to pay attention to fluency variables to alert consumers to potential hazards and to prevent the erroneous impression that a hazardous product is safe simply because its name is easy to pronounce.

## Social consensus and truth

The observed fluency–familiarity link also has important implications for judgements of truth. As social psychologists have long been aware, people often rely on social consensus information to determine whether something is true or not: If many people believe it, there's probably something to it. Unfortunately, however, we are poor at tracking how often we heard something and rely instead on whether it sounds familiar – if it does, we probably heard it before. Hence, variables that increase the perceived familiarity of a statement also increase its perceived social consensus and the impression that the statement is likely to be true (for a review see Schwarz et al., 2007).

For example, Weaver et al. (2007) presented participants with multiple repetitions of the same opinion statement. For some participants, each repetition came from a different communicator, whereas for others, all repetitions came from the same communicator. When later asked to estimate how widely the conveyed opinion is shared, participants estimated higher social consensus the more often they had read the identical statement – even when each repetition came from the same single source. Apparently, participants drew on the familiarity of the opinion to estimate its popularity – and were once again insensitive to where this feeling of familiarity came from. As a result, a single repetitive voice sounded like a chorus. And once people infer that an opinion is widely shared, it is also likely to be accepted as true – after all, if many people believe it,

there's probably something to it. Hence, the mere repetition of a statement facilitates its acceptance as true, as naturalistic studies of war-time rumours and many laboratory experiments demonstrated (for a review see Schwarz et al., 2009).

As already seen, however, repetition is not the only variable that makes things seem familiar – any other variable that increases processing fluency can do the trick. For example, Reber and Schwarz (1999) presented participants with statements like 'Orsono is a city in Chile' and asked them to judge whether the statement is true or false. To manipulate the statements' perceived familiarity, they presented the statements in colours that were easy or difficult to read against a coloured background. As expected, the same statement was more often accepted as true when the colour contrast made reading easy rather than difficult. Similarly, McGlone and Tofighbakhsh (2000) reported that substantively equivalent aphorisms were more likely to be accepted as true when they were presented in a rhyming (e.g. 'Woes unite foes') rather than non-rhyming form (e.g. 'Woes unite enemies'). Throughout, variables that facilitate fluent processing also facilitate the impression that a statement is familiar and hence likely to be true.

This fluency–familiarity–truth link presents a particular problem when we attempt to counter rumours or to discredit misleading information. In most cases, the correction includes a repetition of the false statement, along with reasons why it is false. Unfortunately, this repetition increases the experience of familiarity when the false statement is encountered again at a later time – long after the correct facts have been forgotten. As a result, corrections that repeat false information ironically facilitate its later acceptance as true (see Schwarz et al., 2007). It is therefore important never to repeat anything that is false. Instead, communicators should attempt to make the truth as fluent and familiar as possible, taking advantage of variables like repetition, rhyme and easy readability.

## Affect and beauty

One of the best known fluency effects is the mere exposure effect originally identified by Zajonc (1968): The more often we see an object, like a Chinese ideograph, the more we like it. From a fluency perspective, repeated exposure is just one of many variables that facilitate fluent processing. If so, any other variable that makes processing easy should also increase liking. Empirically this is the case, as a growing number of studies shows. For example, we like a stimulus more when a preceding visual or semantic prime facilitates its processing – we even find a picture of a lock more beautiful when it was preceded by the word 'key' (see Reber et al., 2004). This positive response to fluently processed stimuli can also be captured with electromyography, a procedure that measures subtle muscle responses in the face (Winkielman & Cacioppo, 2001), indicating that fluent processing feels good.

Our preference for fluently processed stimuli underlies many of the variables known to influence aesthetic experience, from symmetry and figure–ground contrast to the gestalt laws – all of these variables facilitate fluent processing (Reber et al., 2004). The same principle is also central to the observation that we prefer prototypical faces over more unusual ones – prototypical faces are easier to process and elicit a more positive affective response (Winkielman et al., 2006). Moreover, this research also sheds light on why scientists and poets alike believe that beauty and truth go hand in hand, despite all the beautiful and elegant theories that landed on the trash heap of science – intuitive judgements of beauty and truth are based on the same input, namely the experience of fluent processing (Reber et al., 2009; Schwarz, 2006).

## Fluency and processing style – Do I need to think twice?

Our positive affective response to fluently processed material and the role of fluency in judgements of popularity and truth converge to predict an additional effect: Fluently processed material should receive less scrutiny. On the one hand, statements that sound like we heard them before are less likely to invite scrutiny than statements that seem unfamiliar. On the other hand, positive affect generally increases heuristic processing with limited attention to detail, whereas negative affect facilitates systematic processing with higher detail orientation (see Schwarz & Clore, 2007). Hence, material that is presented in a difficult-to-read print font should receive more scrutiny, making it more likely that readers detect substantive errors.

As an example, consider the question 'How many animals of each kind did Moses take on the Ark?' Most people answer 'two' despite knowing that the biblical actor was Noah, not Moses. Even when warned that some of the statements may be distorted, most people fail to notice the error because both actors are similar in the context of biblical stories. However, a change in print fonts is sufficient to attenuate this Moses illusion. When the question was presented in an easy-to-read font, only 7 per cent of the readers noticed the error, whereas 40 per cent did so when it was presented in a difficult-to-read font, similar to the one shown in Figure 1 (Song & Schwarz, 2008a). Whether this helps or hurts task performance depends on whether the first thing that comes to mind is correct or not.

This phenomenon has potentially important practical implications. For example, product manufacturers often hide deceptive information in the fine print to make it less noticeable. If consumers ever read the fine print, however, the disfluency associated with processing it may make it more likely that they notice the deception. Similarly, presenting multiple-choice questions in a difficult-to-read font may attenuate the allure of familiar but erroneous response alternatives.

## Conclusion

As the reviewed examples illustrate, people attend to the dynamics of their own information processing and are highly sensitive to the resulting feelings of ease or difficulty. Unfortunately, they are much less sensitive to where these feelings come from. As has been observed for moods and emotions (for a review see Schwarz & Clore, 2007), they assume that their feelings bear on whatever they are thinking about, unless their attention is drawn to an incidental source. Hence, any variable that facilitates or impairs fluent information processing can profoundly affect people's judgements and decisions. Communicators and educators are therefore well advised to present information in a form that facilitates easy processing: if it's easy to read, it seems easy to do, pretty, good, and true.

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