

COGNITIVE EASE

Whenever you are conscious, and perhaps even when you are not, multiple computations are going on in your brain, which maintain and update current answers to some key questions: Is anything new going on? Is there a threat? Are things going well? Should my attention be redirected? Is more effort needed for this task? You can think of a cockpit, with a set of dials that indicate the current values of each of these essential variables. The assessments are carried out automatically by System 1, and one of their functions is to determine whether extra effort is required from System 2.

One of the dials measures *cognitive ease*, and its range is between “Easy” and “Strained.” Easy is a sign that things are going well—no threats, no major news, no need to redirect attention or mobilize effort. Strained indicates that a problem exists, which will require increased mobilization of System 2. Conversely, you experience *cognitive strain*. Cognitive strain is affected by both the current level of effort and the presence of unmet demands. The surprise is that a single dial of cognitive ease is connected to a large network of diverse inputs and outputs. [Figure 5](#) on [this page](#) tells the story.

The figure suggests that a sentence that is printed in a clear font, or has been repeated, or has been primed, will be fluently processed with cognitive ease. Hearing a speaker when you are in a good mood, or even when you have a pencil stuck crosswise in your mouth to make you “smile,” also induces cognitive ease. Conversely, you experience cognitive strain when you read instructions in a poor font, or in faint colors, or worded in complicated language, or when you are in a bad mood, and even when you frown.

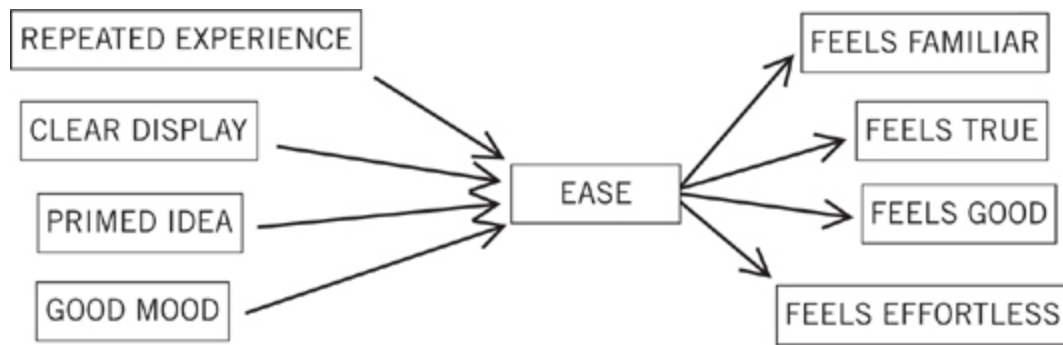


Figure 5. Causes and Consequences of Cognitive Ease

The various causes of ease or strain have interchangeable effects. When you are in a state of cognitive ease, you are probably in a good mood, like what you see, believe what you hear, trust your intuitions, and feel that the current situation is comfortably familiar. You are also likely to be relatively casual and superficial in your thinking. When you feel strained, you are more likely to be vigilant and suspicious, invest more effort in what you are doing, feel less comfortable, and make fewer errors, but you also are less intuitive and less creative than usual.

ILLUSIONS OF REMEMBERING

The word *illusion* brings visual illusions to mind, because we are all familiar with pictures that mislead. But vision is not the only domain of illusions; memory is also susceptible to them, as is thinking more generally.

David Stenbill, Monica Bigoutski, Shana Tirana. I just made up these names. If you encounter any of them within the next few minutes you are likely to remember where you saw them. You know, and will know for a while, that these are not the names of minor celebrities. But suppose that a few days from now you are shown a long list of names, including some minor celebrities and “new” names of people that you have never heard of; your task will be to check every name of a celebrity in the list. There is a substantial probability that you will identify David Stenbill as a

well-known person, although you will not (of course) know whether you encountered his name in the context of movies, sports, or politics. Larry Jacoby, the psychologist who first demonstrated this memory illusion in the laboratory, titled his article “Becoming Famous Overnight.” How does this happen? Start by asking yourself how you know whether or not someone is famous. In some cases of truly famous people (or of celebrities in an area you follow), you have a mental file with rich information about a person—think Albert Einstein, Bono, Hillary Clinton. But you will have no file of information about David Stenbill if you encounter his name in a few days. All you will have is a sense of familiarity—you have seen this name somewhere.

Jacoby nicely stated the problem: “The experience of familiarity has a simple but powerful quality of ‘pastness’ that seems to indicate that it is a direct reflection of prior experience.” This quality of pastness is an illusion. The truth is, as Jacoby and many followers have shown, that the name David Stenbill will look familiar when you see it *because you will see it more clearly*. Words that you have seen before become easier to see again—you can identify them better than other words when they are shown very briefly or masked by noise, and you will be quicker (by a few hundredths of a second) to read them than to read other words. In short, you experience greater cognitive ease in perceiving a word you have seen earlier, and it is this sense of ease that gives you the impression of familiarity.

Figure 5 suggests a way to test this. Choose a completely new word, make it easier to see, and it will be more likely to have the quality of pastness. Indeed, a new word is more likely to be recognized as familiar if it is unconsciously primed by showing it for a few milliseconds just before the test, or if it is shown in sharper contrast than some other words in the list. The link also operates in the other direction. Imagine you are shown a list of words that are more or less out of focus. Some of the words are severely blurred, others less so, and your task is to identify the words that are shown more clearly. A word that you have seen recently will appear to be clearer than unfamiliar words. As figure 5 indicates, the various

ways of inducing cognitive ease or strain are interchangeable; you may not know precisely what it is that makes things cognitively easy or strained. This is how the illusion of familiarity comes about.

ILLUSIONS OF TRUTH

“New York is a large city in the United States.” “The moon revolves around Earth.” “A chicken has four legs.” In all these cases, you quickly retrieved a great deal of related information, almost all pointing one way or another. You knew soon after reading them that the first two statements are true and the last one is false. Note, however, that the statement “A chicken has three legs” is more obviously false than “A chicken has four legs.” Your associative machinery slows the judgment of the latter sentence by delivering the fact that many animals have four legs, and perhaps also that supermarkets often sell chicken legs in packages of four. System 2 was involved in sifting that information, perhaps raising the issue of whether the question about New York was too easy, or checking the meaning of *revolves*.

Think of the last time you took a driving test. Is it true that you need a special license to drive a vehicle that weighs more than three tons? Perhaps you studied seriously and can remember the side of the page on which the answer appeared, as well as the logic behind it. This is certainly not how I passed driving tests when I moved to a new state. My practice was to read the booklet of rules quickly once and hope for the best. I knew some of the answers from the experience of driving for a long time. But there were questions where no good answer came to mind, where all I had to go by was cognitive ease. If the answer felt familiar, I assumed that it was probably true. If it looked new (or improbably extreme), I rejected it. The impression of familiarity is produced by System 1, and System 2 relies on that impression for a true/false judgment.

The lesson of [figure 5](#) is that predictable illusions inevitably occur if a judgment is based on an impression of cognitive ease or strain. Anything that makes it easier for the associative machine to run