

Why should you study the psychology of thinking?

Many thinking processes are unconscious and automatic. While this is adaptive, there are systematic ways in which our thinking processes can lead us astray.

We should study the psychology of thinking because:

- If we aren't aware of how we actually think,
 1. we can be influenced without our awareness.
 - If you define politics as "war" (activating the war schema), then you do anything you can to win "the war", even if it is "underhanded".
 2. we can't actively change how we think. It will allow errors to continue and you will take the wrong action to address the problems in thinking.

We might not notice the errors in thinking because

- We can forget about bad decisions, and underestimate problems in our decision-making process.
- We are good at reinterpreting reality in way positive manner and downplaying mistakes (see defense mechanisms and cognitive dissonance theory in Chapter 13 and 12).
- We adapt and modify situations to deal with our mistakes.
- Others can be forgiving of our mistakes.

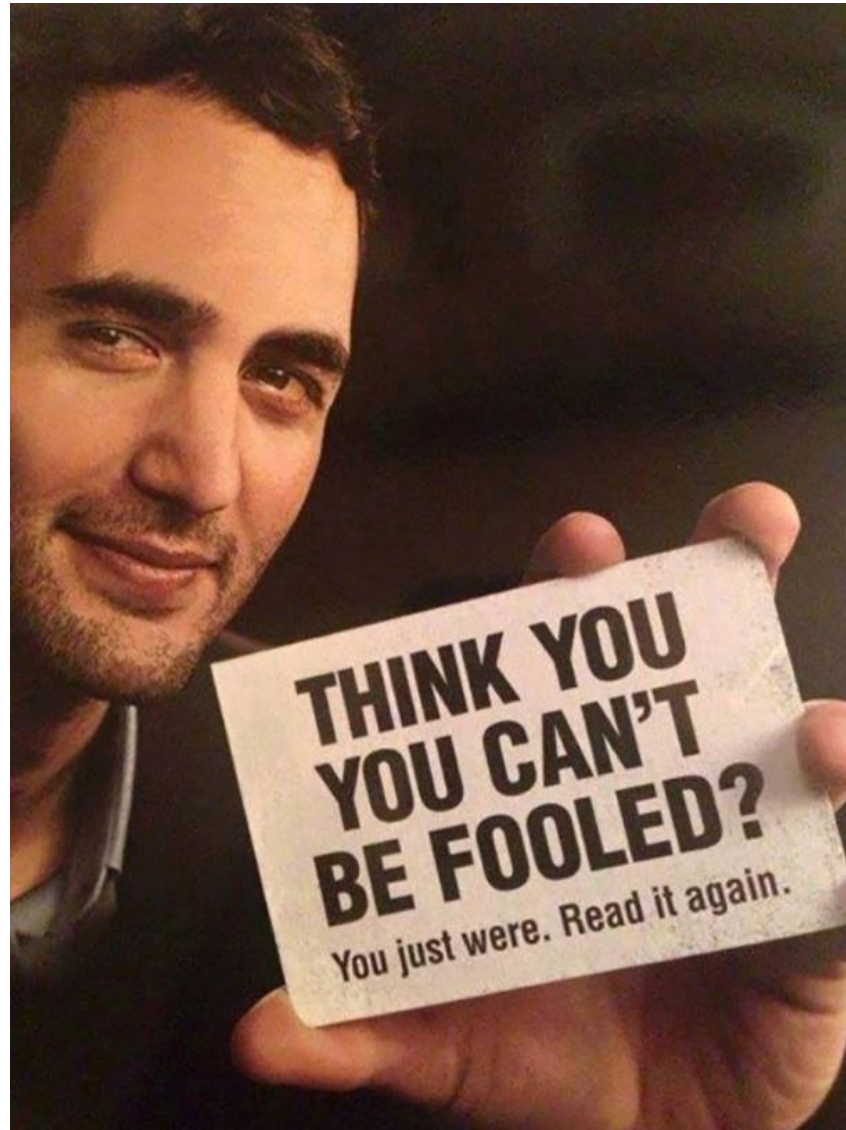
Our Thinking Processes Are Unconscious and Automatic

Read the following:

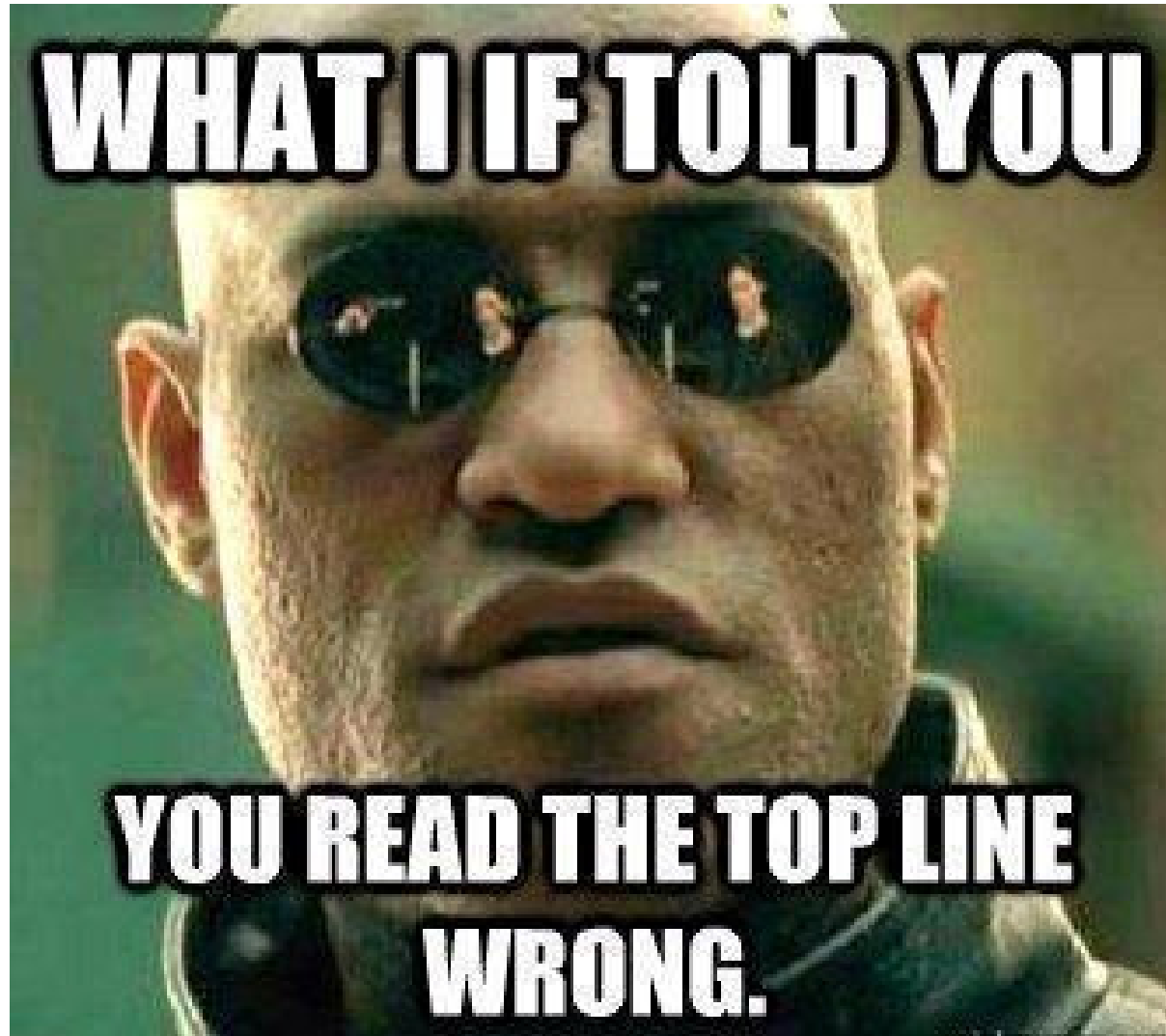


Thinking processes are unconscious and automatic, so we are likely to incorrectly read this.

Our Thinking Processes Are Unconscious and Automatic



Our Thinking Processes Are Unconscious and Automatic



Our Thinking Processes Are Unconscious and Automatic



Periwinkle Jones

@peachesanscream

According to research, 9 out of 10 people don't notice when you replace words with random musical instruments.

Math Problems

To get us started thinking about the psychology of thinking, I want you to do some simple math problems in your head.

It will take the form ____ - ____ equals ____.

For example,

7 - 6 equals ____ (answer to yourself).

Math Problems

olive
coconut
peanut

baby



Your Behavior Can be Influenced Without Your Awareness

As an example of how your decisions can be influenced without your awareness, the following comes from an article 3 Obvious and 4 Not So Obvious Ways Buffets Make Money by John-Erik Koslosky, Dec 12, 2013.

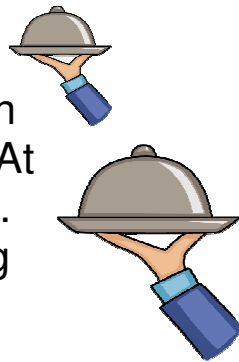


1 - Big cost, little portion

Pricier items on the buffet line – like meat or fish – are cut into smaller pieces. Rationally, a person would just take two pieces instead of one. But in reality, a diner is more likely to follow society's unwritten rule, taking a single smaller piece and moving on down the line.

2 - Tricky serving dishes

The size of serving dishes further plays on our conscience. If there's a small chafing dish with a few pieces of baked haddock, we're a lot less likely to take more than one piece. At the big, full trays of potatoes and rice, we're more likely to scoop out a heaping spoonful. And those starchy, filling, lower-cost items are often positioned earlier in the line, leaving you with less room on your plate by the time you reach that meat.




3 - Serving utensil subterfuge

If that weren't enough, smaller serving utensils also help reinforce the behaviors that benefit the restaurant. Spoons in the inexpensive starches are big. Tongs, spatulas, or forks used to move more expensive proteins to your plate may be smaller, and less geared toward moving large quantities of food at a time.



Analogical versus Symbolic Representations

When you think about information, you use two basic types of internal (mental) representations: analogical and symbolic ([page 304](#)).

Analogical representations	Symbolic representations
Mental representations that have some of the physical characteristics of the object; they are analogous to the objects.	Abstract mental representations that do not correspond to the physical features of the objects or ideas; they are abstract.
<p>(a)</p> 	<p>(b)</p> <p>Violin</p> <p><small>Psychological Science, Fifth Edition Copyright © 2015 W. W. Norton & Company</small></p>
	<p>小提琴</p> <p><small>Psychological Science, Fifth Edition Copyright © 2015 W. W. Norton & Company</small></p>

Analogical or Symbolic Representation?

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Mental Maps

A mental map allows you to "see" maps and objects in your mind. Mental maps help people think about the world around them, but these mental representations are not entirely accurate and can omit some details.

Which is farther east, San Diego, California or Reno, Nevada?

Without looking at a map, we use our mental map. In our mental maps and mental representations, we know that California is general west of Nevada. We smooth irregular lines and state borders and infer that San Diego is further west than Reno (it isn't).

Our mental maps aren't always accurate and isn't an exact replica of reality. For most general purposes, this is fine, but can lead to systematic errors.



FIGURE 8.2

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Concepts

Prototypes: The most typical instance of a particular concept ([page 254](#))

Exemplars: Individual instances of a concept or category held in memory ([page 254](#)).

Schemas and Memory

In this demonstration, participants were asked to wait in this office for the study on memory to begin.



Afterwards, they were brought to another room and asked to recall as many objects as they could remember in the office they were waiting in.

Schemas and Memory Distortions

The participants had correct and incorrect recollections about the office:

Items typically found in an office that is consistent with an office schema

Correct recollections by participants:

- Chair
- Bookcase
- Desk
- Typewriter

Incorrect recollections by participants:

- Books
- Telephone
- Filing cabinets
- Pens and pencils
- Coffee cups

Items typically not found in an office

Items not recalled by participants:

- Coffee pot
- Wine bottle
- Picnic basket



Schemas and Memory Distortions

How do psychologists explain these errors in memory recall?

A schema is an organized cluster of information about a particular topic (a [different definition](#)).



Most people do not pay attention to the details and encode the content of the office because it is not very important for their daily life. A majority of the contents of office entered sensory memory, but was not encoded (see *encoding failure*) into *short-term memory* and quickly forgotten.

To help “remember” and reconstruct the contents of the office, people activated an “office schema” and inferred items that are typically in an office. This means:

- Remembering things that are typically in an office (regardless if they were in there or not).
- Not remembering or forgetting things that were in the office but not in a typical office.

Schemas

A schema is a mental structure--collections of ideas, prior knowledge, and experience--that help you organize information and guide your thinking and behavior.

In general, we tend to remember things consistent with our schemas and forget things that are inconsistent with our schemas.

While schemas can lead to systematic errors, they are useful because

- Many of the commonly encountered situations have consistent attributions (e.g. country music dance vs. orchestral concerts or libraries are quiet and contain books).
- Schemas are useful because people have specific roles within the context of a situation (dancing vs. sitting or librarian behave differently in a library than a reader does).
- Schemas allow you to think efficient (and quickly) about objects and events you encounter ([page 306](#)).

Mental Representations and Problem Solving: The Hotel Problem

A hotel detective was making his rounds through the corridors of the hotel. As he passed by a room, he heard a voice behind the closed door. The voice yelled, "Don't shoot John!" Immediately afterwards, the detective heard a gun discharge. He immediately broke into the room and encountered the following scene.

A dead woman was lying on the floor. Next to her was a gun. Three people were standing around her. They were a judge, a soldier, and a mail carrier. The detective immediately arrested the mail carrier for murder.

Based on the information provided, how did the hotel detective know to arrest the mail carrier?

If you know the answer, raise your hand, and I will tally how many people know the answer. **DO NOT** reveal how you know the answer. We may need to create a visual representation to help solve the problem.

How does the mental representation affect your ability to solve the problem?

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How does the representation affect your ability to solve the problem?

If you don't understand how you are being influenced, you are going to take the wrong action to address the problem and fall for the same trick when it shows up in a different form.

Schemas [Can] Allow Development of Stereotypes

You can use schemas in several ways ([page 308](#)).

1. Common situations have consistent rules (students in classrooms sit at desks).
2. People have specific roles within situational contexts (students in classrooms behave differently than diners in restaurants do).
3. Schemas allow you to quickly process information to make generalizations about people, events, and objects. These generalizations about people are called stereotypes.

However, schemas have unintended consequences such as reinforcing sexist or racist beliefs about people in particular groups stereotypes ([page 309](#)).

When children and teens are asked to draw a scientist, very few draw a woman as a scientist. Schemas operate at an unconscious level without our awareness and affect how we think about others regarding gender, race, religion, occupation, age, etc and can influence our perceptions of ability and aspirations.

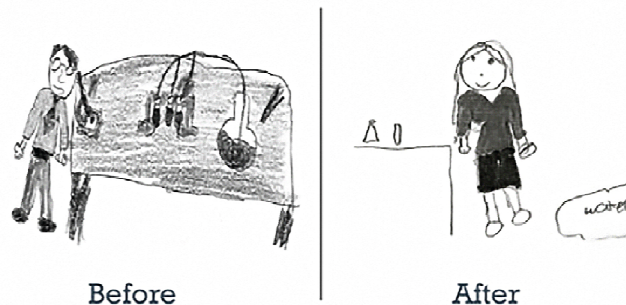


FIGURE 8.8

Schemas, Stereotypes and Behavior

GENDER BIAS



assertive



bitch



articulate



chatty



stud



slut

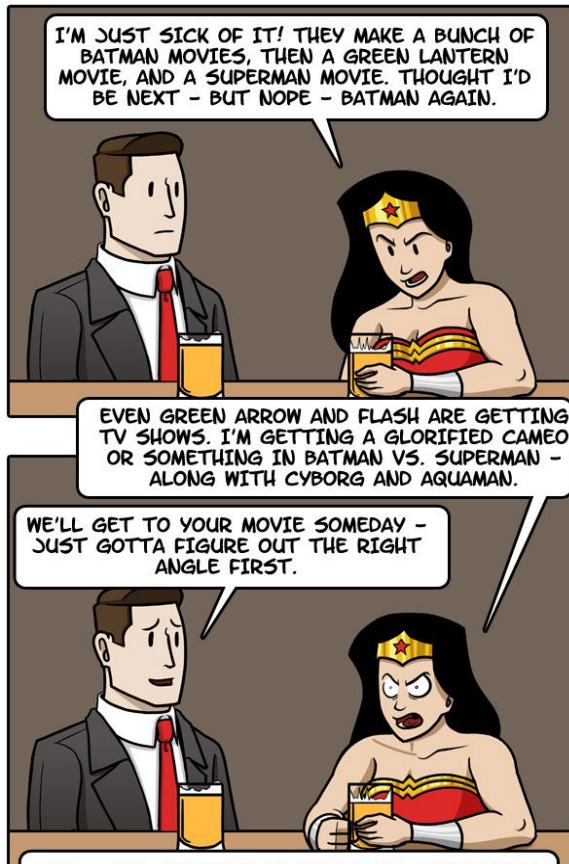


leader



nag

Schemas, Stereotypes and Behavior



Stereotypes and Memory

In the following demonstration, people looked at this picture and later asked to describe what occurred.

What do you see in this picture?



Figure 6.11

Psychologist Gordon Allport showed subjects this picture for a very brief period of time to test the accuracy of their "eyewitness" testimony in a situation in which racial prejudice might influence their perception.

From "Eyewitness Testimony" by Robert Buckhout. Copyright © 1974 by Scientific American, Inc. All rights reserved.

What do you remember about this picture?

Stereotypes and Memory

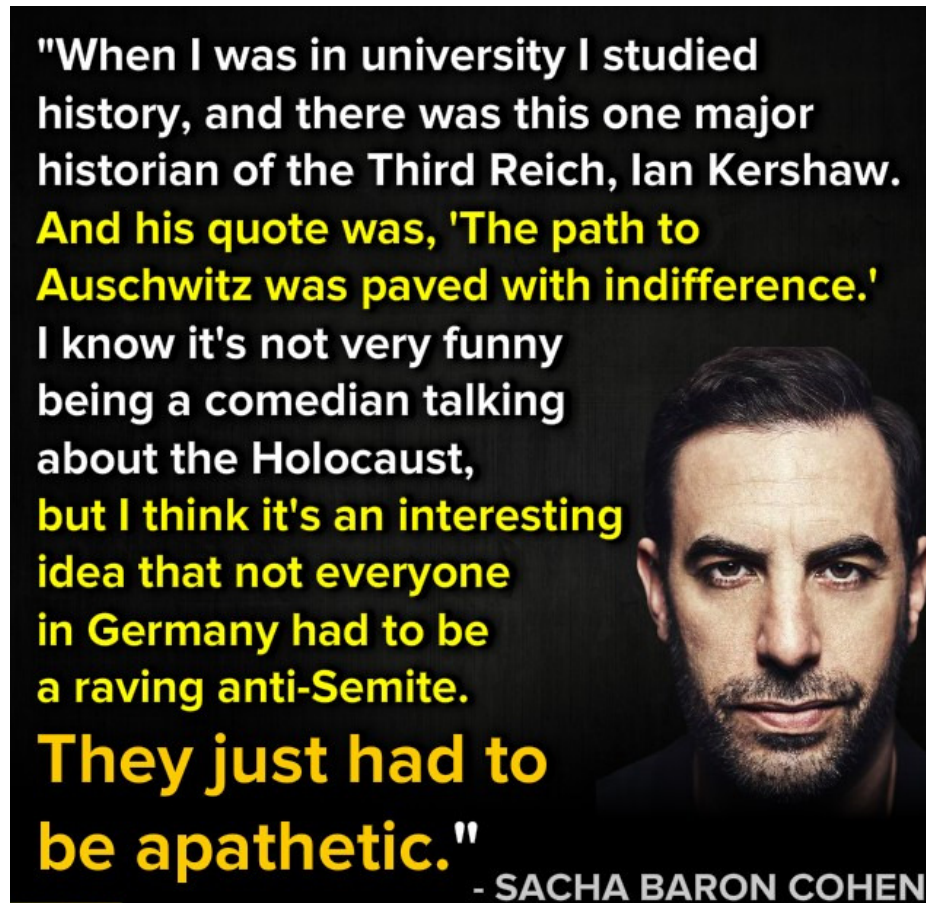
Activating schemas involving race can make you forget things that are inconsistent with your schema and remember things that are consistent with that schema—regardless of the reality.

This experiment was done when stereotypes of black people were quite negative (e.g., people had a stereotype that black people are more likely to rob a person). With this stereotype, people remembered the following that **were not** true:

- The black man was more aggressive.
- The white person was more passive.
- The passengers were afraid.
- The razor was in the black man's hand.

Schemas and stereotypes can influence memory, and has the potential to influence our behavior, attitudes, or decisions, by not giving those with inaccurate schemas the benefit of doubt or opportunities. If you have a negative stereotype of minorities, members of groups you consider “outcast” or deviant, you are more likely to interpret behavior as being criminal and notice more “criminal behavior” in minorities and ignore “criminal behavior” in non-minorities.

Schemas and Behavior



We have a mental representation of how genocide occurs. Being apathetic and indifferent, in many people's mind, is not associated with being anti-Semitic or the Holocaust.