

Sara Lindmont: Hi, everyone. Welcome to today's webinar, ***Critical Thinking Skills: A Process for Better Problem Solving and Decision Making***, hosted by HRDQ-U and presented by Rick Lepsinger. My name is Sara, and I will moderate today's webinar. The webinar will last about an hour, so if you have any questions, go ahead and type them into the questions panel on your go-to webinar area there. You can open that up, type in there, hit submit, and those questions will come through to us. We'll either answer them as we go or at the end. If we run out of time, we'll answer them afterwards by email, so you will definitely hear from us.

Sara Lindmont: Today's webinar content is from our newest program titled Critical Thinking Fundamentals. If you're interested in delivering this training within your organization, please contact HRDQ. Our presenter today is Rick Lepsinger. President of OnPoint Consulting, Rick's career has focused on helping organizations and leaders identify and develop leaders, work better virtually, enhance cross-functional team performance, and get from strategy to execution faster. He conducts numerous seminars and workshops on succession management, leading from a distance, leading cross-functional teams, and enhancing execution. Rick has written numerous articles and is the author or co-author of several books, including his most recent *Closing the Execution Gap: How Great Leaders and Their Companies Get Results*.

Sara Lindmont: Welcome, Rick, and thank you for joining us today.

Rick Lepsinger: Sara, thanks very much. I'm glad to be here. And, everyone, welcome. Thank you for joining us today. As Sara said, today's topic is around critical thinking, which is all about enhancing judgment and the quality of your decisions overall. We're gonna take time to cover four primary objectives. We're gonna talk a little bit about what we mean by critical thinking, what it actually is, what it actually looks like in practice. We'll talk about some of the basic skills, the attitudes, the characteristics of effective critical thinkers. We'll walk through a four-step process for critical thinking, and really the importance of that is that critical thinking is a skill you can learn. Some people may be born with a tendency to be more critical in their thinking, but all of us can learn to do this, and to do this effectively. I will also talk a little bit about some of the common critical thinking mistakes and what you can do to avoid them overall.

Rick Lepsinger: Let's start with a definition in terms of what we mean by critical thinking, and critical thinking really is, fundamentally, it's the process by which you go about evaluating the information that you're receiving. You're evaluating it in terms of its truthfulness and its value overall. But you're doing this in a systematic way, in a way that is directive and that is efficient overall. It really is thinking a little bit about the information you're getting in terms of how accurate is it, and is it of use to me in general.

Rick Lepsinger: In terms of the benefits. I think we spoke a little bit before that critical thinking is kind of a baseline or a fundamental skill or competence that would impact any number of work-related activities, as you can see listed here. It could certainly improve communication, it can help in your written communication as well. When it comes to making decisions on the job about choosing new markets, handling a crisis, deciding who to hire, critical thinking is sort of fundamental to being able to do those things well. The challenge for many of us in a very busy, stressful world is to take the time, right? And to avoid old habits and biases that may negatively impact our ability to really think through the situation and the information that we're getting.

Rick Lepsinger: When you think about the people who are the most effective critical thinkers, there are a number of characteristics that many of them share. It's interesting because some of these things are sort of, you might think of them as almost mutually exclusive, but these are people who are inquisitive and open-minded. They're objective and analytical, and they're also reflective and reasonable.

Rick Lepsinger: Let's take a look at each one of those in a little bit more detail. In terms of being inquisitive and open-minded, this is really approaching a situation without any preconceived ideas. This can be very challenging. One of the things I would suggest is that it's not that all of a sudden we become kind of neutral, or all of the sudden being open-minded where we just don't have preconceived notions. The idea here is that with awareness you can check yourself. We all naturally have some preconceived idea about a situation or about a choice or an option, or about an individual.

Rick Lepsinger: The idea is to not let that preconceived idea dominate, to really be able to check yourself and say, "Is there other information? Is there another way to look at that?" That's really what we mean by being curious. It's not that you don't have the preconceived idea. It's that you move past it. You're aware of the fact that you do, and you move past it. The idea is that you, and one way to do that may be to check in with other people, trusted advisors, people who are subject matter experts, to give you

another perspective on a particular situation.

Rick Lepsinger: On the objective and analytical side, this is about minimizing the impact of emotion on your decision making. We can talk it a little bit later, but it's not that you eliminate emotion because it's a component of the decision making process, but you also wanna be as objective as possible, and in terms of being analytic, to be able to assess the data that's in front of you. And to be able to determine of all the information you're getting, which is most important, and which is most useful. The key here is being able to separate facts from opinion. That becomes very challenging in today's world. What is a fact? We used to know what that was, but for some reason it's not as clear as it used to be, from someone's opinion overall. The main difference is that facts can be proved or disproved. Facts some kind of backed up information, and it's objective, it's unbiased. Opinions is something that it's a point of view that I have, that I may or may not be able to provide some supporting information.

Rick Lepsinger: The whole idea here is to avoid taking opinions and presenting them as if in fact they were facts. Now the key here, again, is not so much what you expect other people to do, but it's really on the receiving side, it's as you're listening, as you're reading, to really say, "What's the basis of this? What's behind this overall?" There are a couple of key questions that you can use to help you separate facts from opinion overall, to really think about the key issue or the problem you're trying to resolve. What information do you have about the issue? What assumptions do you have, or ideas that support your strategy or plan? Is there evidence to support these assumptions? What might be gaps in reasoning? And to really think, pose these questions to yourself or to the team to really help you think it through, to not necessarily just take the information as given that it will be true and accurate.

Rick Lepsinger: Another technique to help you rethink or reframe the problem, to give you a fresh point of view on it, is reframing. There are four different ways to reframe an issue or a problem. One is paraphrasing. Your initial view or issue is, how can we reduce our shipping delays? If you were going to reframe it using paraphrasing, you might say, "How can we ensure customers receive their orders on time?" Looking at it through a different lens, helps you start to think through and separate opinion from fact going forward.

Rick Lepsinger: The other is a 180-turnaround. If initially you're thinking about, how can we encourage employees to follow the new procedure? If you flipped it around 180 degrees, you might say, "What might we be doing to discourage employees from following the new procedure?" To put a different lens on it. The third is to broaden it, or expand it. If initially

you're thinking, should we expand our product line in China, you might reframe it by saying, "How can we achieve increased financial success in China?" Or to redirect it. If initially you're posing the question, "How can we increase revenue?" To reframe it by saying, "How can we decrease our costs?" Again the idea here is to put a different lens on things, to get a different point of view.

Rick Lepsinger: Let's see how in terms of your ability to determine which is a fact and which is an assumption. We'll be doing a number of these during the course of our time together to give you an opportunity to test your critical thinking skills. Let's take a look at the first scenario around recognizing assumptions.

Rick Lepsinger: When product A was launched in India, TV commercials proved to be the most effective marketing tool. That's why to support the launch of the product in our market, we should allocate most of the budget to TV commercials. Which of the following is a fact or an assumption? Number one: The two markets have similar consumer media preferences. Is that a fact or is that an assumption? Number two: TV commercials that supported product A launch in India had the highest ROI among media channels.

Rick Lepsinger: Just use the information that you've been presented in this little mini-case without adding too much to it. Sara's putting up the polling question right now. Which one is a fact? Pick the one you think is a fact. We'll keep it open for a few moments.

Rick Lepsinger: Sara, you can close it when we get about half or so, depending on how fast they're coming in.

Rick Lepsinger: Okay, so most people picked the second one, TV commercials that supported the product launch in India tend to be the fact. Sara, if you close that down, we'll take a look at the right answer. In fact, that is the correct answer. The first one, the two markets have similar consumer media preferences, is an assumption that's being made. There's no information in the little scenario that indicates that they had the same preferences, but you do have some information that can be supported that says it had the best return on investment overall.

Rick Lepsinger: Let's take a look at a second scenario. Here I do not support telecommuting in our region. When we tried to implement this a few years ago, the initiative failed because of technology. People could not access the internet when away from the office and the narrow bandwidth made it impossible to hold virtual meetings.

Rick Lepsinger: Which of the following is a fact? The issues that prevented the

successful rollout of telecommuting previously have not been resolved, or access to necessary technology has a great impact on the effectiveness of people working remotely.

Rick Lepsinger: Sara, if you'd put up the poll. Which one of these statements is a fact? Sara, you can close it whenever ... Oh, there we go. Okay. Let's take a look at the results.

Rick Lepsinger: Again, people selected number two, access to technology has a great impact. And most people picked that as the fact overall. Let's take a look at the ... And in fact that is the correct answer. We do know that based on this scenario that access is critical. We do not have any real data that says this issues have not been resolved. This particular person who's speaking is assuming that the issues have not been resolved, but there's no information in this particular case that would indicate that.

Rick Lepsinger: The second is around being reflective and reasonable. Here we're talking about personal bias, and avoiding personal bias and applying common sense. Again, the key here on personal bias, it's not that you won't have bias and preferences. The challenge is to recognize it, and recognize when it's affecting your choices and your decisions. When we think about some mistakes that individuals make, there's a number of them. They have to do with bias, with hidden assumptions, with misinterpreting statistics, jumping to conclusions, rationalizing, and emotional thinking. Let's take a look at each one of those in a little bit more tail.

Rick Lepsinger: Biases is about being attached to a particular belief, right? And closed off to information that runs counter to that overall, right? We have the idea of a confirmation bias. We are only looking for information that supports your conclusion. You draw the conclusion, then look for information that supports it, and do not attend to other data. Again, it's not ... it's almost human nature to do it, it's the awareness that it's happening, it's recognizing so you can stop it from happening.

Rick Lepsinger: Hidden assumptions is about reaching a conclusion without supporting evidence. It's just, "I believe this. There may not be any data around it, but I believe it overall." The misinterpreting statistics, and I think this is particularly interesting, especially against this notion of, what's a fact? I thought it was a fact, but what is a fact? There's this idea about misinterpreting or misusing statistics overall.

Rick Lepsinger: If you take a look at these two items: Taking this drug reduces the risk of cancer by 50%. Taking this drug reduces the risk of cancer from 6% to 3%. Which one would be most convincing to you? For most people, taking the drug, the drug reduces the risk of cancer by 50%, seems much

better than reducing the risk of cancer from 6% to 3%. However, it's the same statistic. It's just being presented or said in a different way. You could in fact take something that's truthful, that's factual, but it might not necessarily be statistically important or significant in terms of the conversation overall. I think, again, in many ways people manipulate data to put the best spin on it. Part of critical thinking is to really dig in to understand the implication of that data, and what the meaning is overall.

Rick Lepsinger: The other is around jumping to conclusions. This is about going with first impressions, right? Your gut reaction. This is a little bit about the emotional side as well. This is how I feel about it. This is what I believe. This is my experience, so it must be true overall. You're trying to just be aware because this can be a result of stress, of time pressure, that causes us to move to what we think is the easiest conclusion. The idea of rationalization is basically reaching a conclusion and then looking for evidence, right? We have an opinion, and then we look for data that supports it overall.

Rick Lepsinger: The emotional thinking is the idea of reacting emotionally, and it could be because the language the other person is using, the situation, the stakes that are high, rather than being more objective. I would say to you in these situations, it's not so much to eliminate feelings, to eliminate your gut reaction, but what you wanna do is make sure you have a balance. You want both your right brain and your left brain to sort of be operating together, so that you have kind of the best of both worlds. You have the objective analytic side, and you have the subjective sort of gut feeling. Then you can sort of put those two things together.

Rick Lepsinger: Moving to critical thinking skills overall, and there are three of them: The ability to reason, the ability to predict, and the ability to evaluate. Once again, these are all learned skills. Some of us have more of a tendency to them, but these are things we can all learn and enhance our abilities. The whole idea of the ability to reason, it's about applying systematic, logical reasoning to an issue overall. The key here is being able to find mistakes, inconsistencies, in logic and reasoning, and to take the time to actually look for them overall, right? You wanna find and surface hidden assumptions overall. The idea of thinking about cause and effect, and to avoid confusing that is part of that analytic thinking.

Rick Lepsinger: For example, you have online training participants receive higher scores, so the conclusion would be online training is more effective. However, the problem with that reasoning is that there are probably multiple reasons that might contribute to that outcome. Even though there might be a relationship between those two, it may not necessarily be

causal. A lot of times when you read studies, they talk about people who don't smoke are smarter, or people who eat kumquats live longer. Well, there may be a relationship between those two factors, but it doesn't necessarily mean that one causes the other. That's where we need to be more discerning, more critical, more focused in terms of our thinking.

Rick Lepsinger: A couple of questions you can use to help you recognize the quality of the information and the evidence that you have, and to be able to recognize the effects of your emotions on when you're evaluating arguments, is to think about the pros and cons. To really step back and say, "What are my biases?" And to be explicit about exploring that. Think about the impact of the decision on other people. Think about who would agree or disagree with the proposed solution, and think about key points, perspectives that you need to keep in mind as you're evaluating these particular options. Part of this is not so much to let critical thinking just happen, it really is the application of some key questions overall.

Rick Lepsinger: The other idea, sorry, let's just go back, is to use this idea of the devil's advocate. You really do wanna have what-if questions. We frequently try to suppress people who are asking what-if questions because they tend to slow things down. We see it as not being a team player, and we really wanna get on to the next task overall. When people raise the, "Well, what if it doesn't? What if it does? What if it could?" We really aren't open to that, but in point of fact, we should be doing the opposite. We should be encouraging this kind of questioning, this kind of raising these kinds of issues to get us to look at the other side of things. This idea of evaluating information overall, I think in terms of related to our cognitive biases and how we go about assessing the quality and value of information.

Rick Lepsinger: I have a video that I'd like to share with you. It's a TED Talk. I think you'll find it very, very interesting. It's really about our tendency to be more biases, to look for patterns, to make assumptions, and not to really be particularly critical about the information we're looking at.

Rick Lepsinger: Sara, if you could start that video for us please.

Michael Shermer: I am Michael Shermer, the director of the Skeptics Society, publisher of Skeptic magazine. We investigate claims of the paranormal, pseudo-science, and fringe groups and cults, and claims of all kinds between science and pseudo-science and non-science and junk science, voodoo science, pathological science, bad science, non-science, and plain old nonsense. And unless you've been on Mars recently, you know there's a lot of that out there. Some people call us debunkers, which is kind of a negative term. But let's face it, there's a lot of bunk. We are like the

bunko squads of the police department out there flushing out ... Well, we're sort of like the Ralph Naders of bad ideas, trying to replace bad ideas with good ideas.

Michael Shermer: I'll show you an example of a bad idea. I brought this with me. This was given to us by NBC Dateline to test. It's produced by the Quadro Corporation of West Virginia. It's called the Quadro 2000 Dowser Rod. This was being sold to high school administrators for \$900 apiece. It's a piece of plastic with a Radio Shack antenna attached to it. You could dowse for all sorts of things, but this particular one was built to dowse for marijuana in students' lockers.

Michael Shermer: The way it works is you go down the hallway, and you see if it tilts toward a particular locker, and then you open the locker. It looks something like this. I'll show you. Well, it has kind of a right-leaning bias. Well, this is science, so we'll do a controlled experiment. It'll go this way for sure.

Michael Shermer: Sir, do you want to empty your pockets, please, sir?

Michael Shermer: So the question was, can it actually find marijuana in students' lockers? And the answer is, if you open enough of them, yes.

Michael Shermer: But in science, we have to keep track of the misses, not just the hits. And that's probably the key lesson to my short talk here is that this is how psychics work, astrologers, tarot card readers and so on. People remember the hits and forget the misses. In science, we keep the whole database, and look to see if the number of hits somehow stands out from the total number that you would expect by chance.

Michael Shermer: In this case, we tested it.

Michael Shermer: We had two opaque boxes. One with government-approved THC marijuana, and one with nothing, and it got it 50% of the time, which is exactly what you'd expect with a coin-flip model. That's just a fun little example here of the sorts of things we do.

Michael Shermer: Skeptic is the quarterly publication. Each one has a particular theme. This one is on the future of intelligence. Are people getting smarter or dumber? I have an opinion of this myself because of the business I'm in, but in fact, people, it turns out, are getting smarter. Three IQ points per 10 years, going up. Sort of an interesting thing.

Michael Shermer: With science, don't think of skepticism as a thing, or even science as a thing. Are science and religion compatible? It's like, is science and plumbing compatible? They're just two different things. Science is not a

thing. It's a verb. It's a way of thinking about things. It's a way of looking for natural explanations for all phenomenon.

Michael Shermer: I mean, what's more likely, that extraterrestrial intelligences or multi-dimensional beings travel across the vast distances of interstellar space to leave a crop circle in Farmer Bob's field in Puckerbrush, Kansas to promote skeptic.com, our web page? Or is it more likely that a reader of Skeptic did this with Photoshop? And in all cases we have to ask, what's the more likely explanation? Before we say something is out of this world, we should first make sure that it's not in this world. What's more likely, that Arnold had a little extraterrestrial help in his run for the governorship, or that the World Weekly News makes stuff up?

Michael Shermer: Part of that, the same theme is expressed nicely here in this Sidney Harris cartoon. For those of you in the back, it says here: "Then a miracle occurs. I think you need to be more explicit here in step two." This single slide completely dismantles the intelligent design arguments. There's nothing more to it than that. You can say a miracle occurs, it's just that it doesn't explain anything. It doesn't offer anything. There's nothing to test. It's the end of the conversation for intelligent design creationists.

Michael Shermer: Whereas, and it's true, scientists sometimes throw terms out as linguistic place fillers, dark energy or dark matter, something like that, until we figure out what it is, we'll just call it this. It's the beginning of the causal chain for science. For intelligent design creationists, it's the end of the chain. Again, we can ask this, what's more likely? Are UFOs alien spaceships, or perceptual cognitive mistakes, or even fakes?

Michael Shermer: This is a UFO shot from my house in Altadena, California, looking down over Pasadena. If it looks a lot like a Buick hubcap, it's because it is. You don't even need Photoshop. You don't need high-tech equipment, you don't need computers. This was shot with a throwaway Kodak Instamatic camera. You just have somebody off on the side with a hubcap ready to go. Camera's ready, that's it.

Michael Shermer: Although it's possible that most of these things are fake or illusions or so on, and that some of them are real, it's more likely that all of them are fake, like the crop circles. On a more serious note, in all of science we're looking for a balance between data and theory. In the case of Galileo, he had two problems when he turned his telescope to Saturn. First of all, there was no theory of planetary rings. Second of all, his data was grainy and fuzzy, and he couldn't quite make out what it was he was looking at. He wrote that he has seen, "I have observed that the furthest planet has three bodies." And this is what he ended up concluding that he saw. So without a theory of planetary rings and with only grainy data, you can't

have a good theory. It wasn't solved until 1655.

Michael Shermer: This is Christiaan Huygens's book in which he cataloged all the mistakes that people made in trying to figure out what was going on with Saturn. It wasn't till Huygens had two things, he had a good theory of planetary rings and how the solar system operated, and then he had better telescopic, more fine-grain data in which he could figure out that as the Earth is going around faster, according to Kepler's Laws, than Saturn, then we catch up with it. And we see the angles of the rings at different angles, there. And that's, in fact, turns out to be true.

Michael Shermer: The problems with having a theory is that your theory may be loaded with cognitive biases. One of the problems of explaining why people believe weird things is that we have things, on a simple level, and then I'll go to more serious ones. Like, we have a tendency to see faces. This is the face on Mars. In 1976, where there was a whole movement to get NASA to photograph that area because people thought this was monumental architecture made by Martians.

Michael Shermer: Well, it turns out, here's the close-up of it from 2001. If you squint, you can still see the face. And when you're squinting, what you're doing is you're turning that from fine-grain to coarse-grain, so you're reducing the quality of your data. And if I didn't tell you what to look for, you'd still see the face, because we're programmed by evolution to see faces. Faces are important for us socially. Of course, happy faces, faces of all kinds are easy to see. You see the happy face on Mars, there. If astronomers were frogs, perhaps they'd see Kermit the Frog. Do you see him there? Little froggy legs. Or if geologists were elephants?

Michael Shermer: Religious iconography. Discovered by a Tennessee baker in 1996. He charged five bucks a head to come see the nun bun till he got a cease-and-desist from Mother Teresa's lawyer. Here's Our Lady of Guadalupe and Our Lady of Watsonville, just down the street, or is it up the street from here? Tree bark is particularly good because it's nice and grainy, branchy, black-and-white splotchy, and you can get the pattern-seeking, humans are pattern-seeking animals. Here's the Virgin Mary on the side of a glass window in Sao Paulo. Here's the Virgin Mary made her appearance on a cheese sandwich, which I got to actually hold in a Las Vegas casino, of course, this being America.

Michael Shermer: This casino paid \$28,500 on eBay for the cheese sandwich. But who does it really look like? The Virgin Mary? It has that sort of puckered lips, 1940s-era look. Virgin Mary in Clearwater, Florida. I actually went to see this one. There was a lot of people there. The faithful come to be in their wheelchairs and crutches, and so on. We went down and investigated. Just to give you a size, that's Dawkins, me and The Amazing

Randi, next to this two, two-and-a-half story-sized image. All these candles, so many thousands of candles people had lit in tribute to this. We walked around the backside, just to see what was going on. It turns out wherever there's a sprinkler head and a palm tree, you get the effect. Here's the Virgin Mary on the backside, which they started to wipe off. I guess you can only have one miracle per building. Is it really a miracle of Mary, or is it a miracle of Marge?

Michael Shermer: I'm going to finish up with another example of this, with auditory illusions. There's this film, *White Noise*, with Michael Keaton, about the dead talking back to us. By the way, the whole business of talking to the dead it's not that big a deal. Anybody can do it, turns out. It's getting the dead to talk back that's the really hard part. In this case, supposedly, these messages are hidden in electronic phenomena. There's a [ReverseSpeech.com](http://ReverseSpeech.com) web page at which I downloaded this stuff. Here is the forward, this is the most famous one of all of these. Here's the forward version of the very famous song.

Michael Shermer: (singing)

Michael Shermer: Boy, couldn't you just listen to that all day? All right, here it is backwards, and see if you can hear the hidden messages that are supposedly in there.

Michael Shermer: (singing)

Michael Shermer: What'd you get?

Speaker 4: Satan.

Michael Shermer: Satan. Okay, at least we got Satan. Now, I'll prime your auditory part of your brain to tell you what you're supposed to hear, and then hear it again.

Michael Shermer: (singing)

Michael Shermer: You can't miss it when I tell you what's there.

Michael Shermer: I'm going to just end with a positive, a nice little story. The Skeptics is a nonprofit educational organization. We're always looking for little good things that people do. In England, there's a pop singer, one of the top popular singers in England today, Katie Melua. She wrote a beautiful song. It was in the top five in 2005, called, *Nine Million Bicycles in Beijing*. It's a love story. She's sort of the Norah Jones of the UK, about how she much loves her guy, and compared to nine million bicycles, and so forth. And she has this one passage here.

Michael Shermer: (singing)

Michael Shermer: Well, that's nice. At least she got it close. In America, it would be, "We're 6,000 light years from the edge."

Michael Shermer: But my friend, Simon Singh, the particle physicist now turned science educator, he wrote the book *The Big Bang*, and so on, uses every chance he gets to promote good science. And so he wrote an op-ed piece in *The Guardian* about Katie's song, in which he said, "Well, we know exactly how far from the edge. It's 13.7 billion light years, and it's not a guess. We know within precise error bars there how close it is. We can say, although not absolutely true, that it's pretty close to being true."

Michael Shermer: And, to his credit, Katie called him up after this op-ed piece came out, and said, "I'm so embarrassed. I was a member of the astronomy club. I should've known better." And she re-cut the song. I will end with the new version.

Michael Shermer: (singing)

Michael Shermer: How cool is that?

Rick Lepsinger: ... one way to talk a little bit about the role of cognitive biases, how they impact our judgment, the way in which we look at information, and the importance of critical thinking, the importance of being skeptical and really looking at information overall.

Rick Lepsinger: I'm gonna skip these next couple of slides, at least I'm gonna try to. Okay, all right. The third area's around the ability to predict. This is about identifying consequences, especially looking at the unintended consequences, or the potentially negative consequences of your action overall. There's a little delay in the ... The idea here is to think about the outcomes, not the ones you want, rather to think a little bit about the possible, potential problems that might be out there overall. That is really the focus. We tend to focus on what we want, rather than what might be or what could happen.

Rick Lepsinger: The last is the ability to evaluate overall. This is around assessing the merit of a conclusion that you're making overall. What you're trying to do is think about, does it follow from the data I have? Is the conclusion fair and reasonable? And based on the information I have, does it make sense overall?

Rick Lepsinger: Here are a couple of questions that you can ask yourself to basically help you determine if your conclusions are following the information that

you have overall. After evaluating the facts, what's the best possible outcome? What specific evidence do I have that's driving my conclusion? Is there new evidence that I should be thinking about? What does your common sense say overall? What's the timeline? What opportunities does your conclusion provide? And by being specific, and asking yourself these questions, you can make it part of your thought process overall.

Rick Lepsinger: The important thing to remember, I think, around critical thinking is that decisions should not be seen as final. You really need to be open to new facts, new information that may give you a different point of view on things, and may cause you to make a few adjustments overall. What you're trying to do is not avoid or ignore new information just because you've made a commitment to a particular point of view.

Rick Lepsinger: We'll just move ahead a little bit on this. In terms of some of the obstacles around critical thinking. One of them is a general lack of awareness. In general, that's what we've talking about, being introspective, understanding your own biases, understanding what some of the key questions are, being a little bit skeptical is a key component of being a critical thinker and a key obstacle. The poor decision making culture and the lack of time overall. Let's take a look at each one of those.

Rick Lepsinger: In terms of the lack of awareness. One solution is to follow a linear process. To use a structured process around collecting information, assessing the information, and drawing a conclusion, which will help in terms of addressing that awareness piece. You want to overall take a look at the results, and basically ask, is it reasonable? What are the overall implications? What decisions and actions will you take now going forward?

Rick Lepsinger: A poor decision making culture here is around a culture that rewards speed and fast decisions. When people do critical thinking self assessments, one of the things that causes problems is not that they're not good critical thinkers. Many people are excellent critical thinkers, but when you rush the test, or when you get interrupted during the test, it tends to have a negative impact on your score, on the outcome. This idea of speed does not always work in your favor overall, right?

Rick Lepsinger: What you're trying to do also, and this goes back to that devil's advocate, that what-if question. Avoiding group think, where the culture of the organization is to go along with the group. That can be the death of critical thinking, where people don't express an alternate point of view, don't share additional information, don't ask difficult questions overall.

Rick Lepsinger: The lack of time, I think, is also interesting. Again, it goes back to the speed thing. It causes suboptimal decisions to be made because you're not taking time to explore the relevant information. You're also working with incomplete information and higher stress levels. The key question here is, what information is most relevant, and how do you know that you have the right information? A structured process can help with that overall, and a critical thinking model.

Rick Lepsinger: The idea here is to start by examining the issue, set out your decision criteria, your goal, then gather that information related to your criteria, and use that to reach a conclusion overall, right? You wanna ask a wide range of questions when you're examining the issue overall, but the key is to set your goal or criteria to be clear about what it is you'll use to make that decision overall, right? To be able to define what a successful outcome would look like before you start to look at information. Now you're at the data gathering stage. You wanna collect a wide range of data, but you also can't go on an unlimited search for information as well, right? The key here is to be able to determine when enough data will help you make the best decision, and how do you have enough information.

Rick Lepsinger: This chart shows the results of a study that was done where they took a look at horse handicappers, race handicappers, people who bet on horses. You can see the red line is the degree of confidence they had, and the blue line is their performance. You can see that as they were given more information their confidence increased dramatically, but their performance did not improve at all. As a matter of fact, there's sort of an inflection point where you can see that their performance actually started to decrease as the information increased. More information is not necessarily better. What you're looking for is the right information, right?

Rick Lepsinger: How do you know when you have the right information? The answer to that question is the systematic process and a decision criteria. A decision criteria answers two key questions. What will the best alternative look like? And what are the characteristics of that alternative that will accomplish our objective in the best way?

Rick Lepsinger: Here's an example of a what decision criteria might look like. This example is around buying a house, which I think is something many of you have done. Here on the left, what you're laying out is the criteria, that basically defines the best house for you. In theory, this is what you would give to the realtor, and you'd say to them, "Only show me houses that meet this criteria." Then you'd take a look at two or three or more alternatives. Now you're able to compare each alternative to that

criteria to see which alternative meets the criteria the best. The importance of this, or the usefulness of this, is you're defining what information is most relevant, what information is most useful.

Rick Lepsinger: Now your search for information is in a more targeted kind of net, rather than just looking at everything out there that's possible, you're defining what's relevant and important. If you can't fill in one of these little matrix squares, your search for information is also more targeted in general because you're focused on a particular criteria. In addition, your assessment of the alternatives is more objective because you're not comparing alternatives to each other, you're comparing alternatives to the decision criteria. Which one meets that criteria the best? It takes the personal preference out of the equation, and it takes personality out of the equation, and allows you to be much more objective.

Rick Lepsinger: When it comes time to reaching a conclusion, you wanna make sure that there's a logical flow between the information you have and the conclusion that you are drawing overall. You're also kind of discarding those that don't meet your criteria, or may have adverse consequences. Because your decision criteria gets at the positive side, but you also wanna do potential problem analysis to look at the potential downside.

Rick Lepsinger: All right, so let's take a look at kind of some general best practices, and then we can open it up for a few questions if you would like. The key here is take time to understand and frame the issue. Speed here is not necessarily your friend. Even when you think you know what the situation is, or you've seen it before, that in fact could be one of the biases. "I've seen this before. I know exactly what it is. I'll do what I did before." Take time to really understand, frame the issue to understand the problem. Awareness of your biases makes a big difference. It's not that you can eliminate your bias. It's not that you can all of the sudden not have them. The key is to be aware. Because those biases actually help you sort through the enormous amount of information that you get every day. The idea here is to be aware of the bias, and not let it have a negative impact on the way you're looking at the information, and the way you're drawing conclusions, right?

Rick Lepsinger: Along with that is to check assumptions. Make sure that opinions are backed up with data. Make sure that the facts you're looking at are presented in the most useful and relevant manner, that the information is not being manipulated, or that people are selectively disclosing information, right? You want to be diligent about collecting data and asking questions. A big part of critical thinking is asking questions overall. Again, timeframes cause us to not do that because it extends the decision making process, but in fact it's really just investing time on the frontend to make a better quality decision so you spend less time on

the backend trying to fix it overall.

Rick Lepsinger: The other thing is that you should work hard to find evidence that refutes your conclusion. Find information that's disconfirming. Many of us work hard to find information that supports our point of view. I would suggest that that's self defeating. Look for information that is actually the opposite of what you would like to do, that refutes it. If in fact you try to knock down your idea, and it still holds up, you have much more confidence that it's the right way to go. So don't avoid or minimize that. Embrace contradictory information to really make sure your idea holds up overall. Focus on objectively testing logic of your conclusion. Does it follow from the data that you have overall? Try to remain open-minded, not too attached to your particular preference or opinion or conclusion, and be open to other points of view and other perspectives.

Rick Lepsinger: All right, so just in general, characteristics of critical thinkers. It's about being inquisitive, being objective, being reflective. These are things if you're aware, you can in fact make happen overall. Some of those things, those characteristics, are not always skill driven. On the skill side though, it's really about a reasoning, being able to anticipate or look forward at potential problems or consequences, and then being able to evaluate information in an objective manner.

Rick Lepsinger: The obstacles we talked about, the lack of awareness, a culture that doesn't support critical thinking, and the lack of time. Those things we actually can control to some degree. And to avoid some of those mistakes, right? The cognitive biases, rationalizations, and to let emotional thinking dominate your approach.

Rick Lepsinger: All right, so we have some time for a couple of questions, but I'll turn it over to Sara at this point.

Sara Lindmont: Wonderful. Thank you so much, Rick. We do have some time for questions, so go ahead and type those up, send those in. While we're waiting for those, I just want to introduce everyone to HRDQ. We publish research-based, experiential learning products that you can deliver in your organization. Today's session was based on our critical thinking fundamentals, and that is a piece that you can deliver yourself, or if you want one of our expert trainers like Rick to deliver it for you, we also provide those services.

Sara Lindmont: Good, I can see some questions are coming in. Let's go ahead and we're gonna get started there. Our first question is about emotion. What role do emotions play in critical thinking and decision making? Are they always a problem?

Rick Lepsinger: No, I don't think emotions are always a problem because, again, emotions can be based on sort of your gut reaction. Your gut reaction is not necessarily based on nothing, right? It's based on your experience, previous experience, your knowledge, which really adds a lot of value. You may not be able to articulate it clearly, but the emotional side isn't always bad. Now, the emotional side, like anger or stress, can definitely be a problem. The idea there is to sort of take time, sort of like count to 10, and give time for your rational brain to kick, but you really do wanna have a balance of both the rational, analytic side and sort of the intuitive, gut-sense on things because both of them add value. Again, the challenge is to keep them in balance and not let one dominate the other overall.

Sara Lindmont: Great, thank you. Our next question is about the culture of organization. How can you change a poor decision making culture?

Rick Lepsinger: Yeah, and that can become a little bit more difficult. Part of it is define culture. A lot of it depends on where you are in the organization, but culture is really kind of the aggregate of individual behavior. And behavior kind of reflects values and norms overall. It starts with controlling what you can control as to the best of your ability. For those of you that actually lead teams, you actually can start to apply some of these critical thinking concepts to your team overall. Now, again, you may not be able to impact the entire organization, but you can impact the culture of your team, the culture of your department overall.

Rick Lepsinger: If you're just an individual contributor, where you don't necessarily have authority or control over how the department or function or organization is working, the idea is just to start to model it, right? To ask some of these key questions, to pose alternatives to people. To do it in a way that's constructive, that doesn't necessarily eat up a lot of time, but that helps people see the value overall. There are a number of ways to make it happen, but the more senior you are in the organization, the more, the broader kind of span you can impact by the application of some of these concepts and tools. It's really just setting up expectations to make sure that people are available, that people understand what they are, and that you're reinforcing their use.

Sara Lindmont: Good, and Rick, I sort of have, I have a question here for you myself. How do I know that I am a good, that I am good at critical thinking? How would have a sense for that?

Rick Lepsinger: Well, there's a couple of things. One, I mean, it starts at being self reflective, and really thinking about, are you questioning assumptions? Are you using a systematic process? Are you evaluating information?

You could just sort of do a self checklist. You can also get feedback from others in terms of debrief the decision making process. Take a look at decisions that have been made and say, "How did we go about that overall?" Debrief it in the context of some of the tools we talked about today.

Rick Lepsinger: In addition to that, you could also evaluate your critical thinking using different self assessments. There's two of them that are out there. One of them is the Watson Glaser Critical Thinking Test, and the other is the Hogan Business Reasoning Inventory. Both of them will give you some inside into your ability to think critically. They give you a whole range of scenarios, and they ask you to draw conclusions based on the scenarios that you're looking at. Those are two self assessments that are available in the public domain, that you'd be able to get some read on your critical thinking skills.

Sara Lindmont: Good, great. Our last question here, I think, that we're gonna have time for is around hiring. Can you talk a little bit about critical thinking in relation to bias and emotions when you're making hiring decisions?

Rick Lepsinger: Yeah, right, that's actually a good question, but that's one of the places where it plays out a great deal. One has to do with the time we put in to really look at the candidate overall, and the kinds of questions we're asking. In the hiring process, frequently we ask sort of softball questions, easy questions. We don't really challenge people. And we may not even have a competency. The competency model would be your decision criteria. And to say, "How well does this person line up against these competencies that I'm using to make the hiring decision?"

Rick Lepsinger: That's one starting point. Do you have the competencies that you're looking for, and are you asking questions to better get at whether they have the competency or not? The other is around biases. If somebody walked in and we just liked them, they go to the same school we went to, we just look for data that supports why we should hire them, right? You're trying to avoid that kind of a bias, that confirmation kind of a bias, or the rationalization bias overall. Or we're just not really, we don't care. We've gotta fill the spot. We'll take the first warm body that looks like they can answer my questions and seem reasonably personal. We'll just get them into the seat right away.

Rick Lepsinger: The problem with that is that you end up getting into a cycle of having to continually rehire because you make a bad hiring choice, the person doesn't work out, and rather than ... the speed there works against you because rather than finding somebody who will stay with the organization and perform at a high level, we find someone who really is not a good fit, they turn over, and then we're back into the hiring cycle

again.

Rick Lepsinger: Here, taking the time, using a competency model as your decision criteria. You might even think about using objective testing because in an interview, people know how to answer your questions and give good interview, but if you use leadership style questionnaires and assessments, they tend to be more objective, and you get a better read on people's preferences, their inclination and their style, and the extent to which they're a good fit, not just the way they've been coached to answer a question in the interview overall.

Sara Lindmont: Good, thank you you so much, Rick. It's always wonderful to hear your expertise.

Rick Lepsinger: Thanks, thanks very much. I'm glad we were able to do this, and again, everyone, thank you very much for joining us. Again, this idea of critical thinking, it's not that there's more fake news in the world. It's just that there's less critical thinking. The idea is we really do need to be more skeptical, more critical, more objective, to probe a little bit, be more open-minded when you're hearing different points of view. I think all of that's really about enhancing judgment and the quality of your decisions. Thanks very much for joining us today.

Sara Lindmont: Good, and if we did not get a chance to answer your question, we will email you shortly with that answer. Go ahead if you have any additional questions, go ahead and type those in. We'll stay on the line here for a second, so I can capture those. We look forward to having you participate in our next webinar.