Would You Drink This? The Literacies of Evaluating Risk

Joyce R. Walker

In this article, Joyce R. Walker tries to research how humans learn to assess risk but comes to the conclusion that building risk assessment literacies is not really something you can memorize or make a step-by-step list for. Instead, we have to wrestle with our brains–learn how to recognize some of our unconscious practices, use research as part of our decision-making, and be more aware of our emotional biases. And yeah, that's pretty much what being a human and trying to learn and use complex literacies in a complex world is like.

INTRODUCTION

One day last spring, in a class I was teaching, folks were joking around about a random water bottle that had been sitting in our classroom since the beginning of the semester. They were asking everyone, "How much money would it take for you to drink out of this water bottle?"[1] We asked everyone, and they gave answers that ranged from $10.00 to $100,000.00. We were really just goofing around before class, but I got all "I can make a *Grassroots* article about anything," and so I suggested that this was, in fact, a conversation about **risk assessment literacies**, and would make a good *Grassroots Writing Research Journal* article about how humans make decisions in situations that involve risk.

1. I would like to thank all of the students in ENG 239 (Spring 2022) for their inspiration, and in particular Izzy Foltz, whose interest in the water bottle is the origin story for this article, and Kayleen Haile, who took a sample of the liquid in question to her father, Dennis Haile, who is the operations supervisor at Wheaton Sanitary District in Wheaton, Illinois.

Risk Assessment Literacies and Why They Matter

Literate activity research, which is the kind of work we do in the *Grassroots* journal, focuses on the full range of resources people use to do stuff like (a) learn new things; (b) interact with other humans, genres, texts, and tools; (c) make texts that go out into the world; and (d) better understand how these complicated systems of learning, interacting, and meaning-making work.

In writing about my learning process related to risk assessment, I'm not only "uptaking" new information, I'm trying to create a framework for future action and future communications about risk.

And so, this article on risk assessment was born. If you're interested, you can also read the comic I made about the whole "Would you drink from this water bottle?" discussion, which tries to apply some of the risk assessment literacies I've gained through my research.

EXPANSIVE AND UNCONSCIOUS LITERACIES

My writing research often focuses on what keeps people going when they are trying to learn something new—the sets of activities, emotions, tools, and interactions that we go through and how we decide to keep going when it becomes difficult or confusing or we're not sure what steps to take next. And that idea is how I understand what I'm doing in this article, where the idea of acquiring risk assessment literacies describes what I've done as I've tried to learn how to think about risk and how to communicate what I know with others.

Figure 1: The sketchy water bottle in question.

I think the pandemic has really made all of us much more aware of how differently people can assess risk. For one person, the vaccine is something to be frightened about; for another, it's people not wearing masks; and for still others, it's how to keep as safe as possible in situations (at work, with family, etc.) when face-to-face interactions are necessary. Facing new risks—daily, often with a sense that we didn't have enough information to choose wisely—was stressful for everyone, and people chose *really* diverse ways of dealing with it.

You'll find other articles in the *Grassroots* journal that ask questions about how people learn new kinds of things, how different kinds of genres evolve over time, and even how people become part of groups of other humans who engage in activities and text-making regarding a particular subject or text. One of my current favorite examples of this is an article by Charley Koenig, "'I Should Quit, Right?' And Other Things I've Said While (Trying) to Learn to Play Chess," where she discusses the different kinds of activities and tools involved in her efforts to learn how to play chess (issue 13.1, Fall 2022). In my case, I'm trying to learn to assess risk, and I ran into my own difficulties in this process.

For example, I first had to acknowledge that humans have really personalized ways of making and doing and learning in the world. While risk assessment strategies can be considered a set of **literacies** (that is, they are knowledge-tools that people use), they are also **expansive literacies**—that is, reading and writing may be included, but all kinds of other ways of knowing (emotions, social interactions, visual and aural learning, etc.) are also included. In addition, it turns out that risk literacies are particularly personal, so it's not like you could write out a step-by-step guide for assessing all risks that everyone could follow. We evolve these literacies based on our emotions; our social interactions and experiences; and the patterns of thinking, communicating, and producing that emerge from all of that knowledge and experience. And, it's important to note, a lot of these complicated literacies are not entirely or explicitly conscious.

Expansive Literacies

"Expansive conceptions of literacy demonstrate the rich, complex, and diverse ways people communicate and make meaning. They also help us to understand literacy as a system of skills that encompass traditional reading and writing as well as other ways of interacting with the world that affect how we make sense of ourselves, others, and society at large."

—Kelly C. Johnston, Faculty blog, Baylor University School of Education.

And that brings me to my second difficulty with learning to assess risk. Many of our everyday literacies (including how we assess risk) are *unconscious*. This means that when we make decisions about risk, we're not only using personalized literacies, we're also using cognitive/emotional tools (inside of our brain/bodies) that we're not consciously aware of.

And the final problem (for me, as the author of this article) is that I don't know much about risk assessment. I'm not an expert talking to non-experts; I'm just a person who wants to understand how people assess risk and what tools I could use to assess risks I might face in the future.

RISK ASSESSMENT LITERACIES

Tools for Understanding Risk and Making Choices About It

Where to Start?

Well, as a non-expert, I started in the classic location for finding out about stuff: I didn't ask SIRI, but I did ask Google. A quick first search led me to a bunch of articles and websites about "risk assessment" for companies, public health agencies, and so on. But my goal was trying to understand how *individuals* assess risk, so I kept searching. Kind of surprisingly, the first source I found that seemed really useful for individuals trying to assess risk was an episode of a podcast created for climbers called "Analyzing Risk." It was kind of funny, because, for me, "climbing up on tall things" is an activity that I would probably be as excited about as I would be to drink from that sketchy water bottle (see the introduction of this article and the comic that follows).

Ummmm . . . nope.

But in a way, it makes sense. Climbing is definitely riskier than many daily activities, so people who climb need to learn to be conscious about their risk assessment, even as they take risks many of us would not. So the ideas presented in that podcast episode seemed like a good place to start in developing basic risk assessment literacies. What I gleaned from this research is summarized next.

Risk and Hazard Identification

When discussing risk, a **hazard** is something that is constant—such as if you have a loose step on a staircase. Until you fix it, that step could injure someone who stepped on it. A **risk** is the likelihood of something bad happening, such as the loose step making someone fall down the stairs.

Risk Characterization: Probability and Consequence

Probability and **consequence** are important aspects of risk assessment, because when a person is assessing a risk, they often have to differentiate between the possible bad thing that could happen vs. the likelihood that the bad thing would actually happen and how bad the bad thing would be. So, for example, if the only people using the staircase with the loose step are people who *know* the loose step is there, then the likelihood of the bad thing (someone falling) is less than if the stairs are used regularly by folks who are unaware of the loose step. The consequence of those two scenarios is the same (someone falling down the stairs), but the probability of that consequence is different. However, the consequences could also range in severity, from slight to serious injury or even death.

Risk Analysis

Life is complicated, and lots of daily activities have different kinds of risks (driving a car, climbing the stairs), as do activities we choose to engage in even though there are known risks (like smoking cigarettes). So, individual risk assessment can be difficult, because you don't always have access to all the information you might need.

Risk Control

Once we've made an analysis of a particular hazard or potential risk, there are sometimes decisions we can make that help to **mitigate the risk**, or to reduce the consequences of a more serious result. For example, if I put a "DANGER" sign at the top and bottom of the staircase with the loose step and painted "LOOSE STEP" on the step, these actions wouldn't eliminate the hazard, but they might mitigate the risk of serious consequences . . . for most people. Except people who are in a hurry. Or people who speak and read languages besides English. Or people whose legs are short enough that they can't reach to step over the loose step. When people are trying to mitigate the impact of a risk on others, the process can mean trying to step outside of one's basic instincts to consider multiple ways to mitigate the risk for different kinds of people ("Analyzing Risk"; "Risk Analysis and Risk Management").

RISK AND EMOTIONS

In the Moment

According to the authors of an article called "Risk as Feelings," "gut feelings experienced at the moment of making a decision . . . can play a critical role in the choice one eventually makes" (Loewenstein et al. 281). Informed research and logical analysis are less important in these moments. In addition, our emotions and process of storing memories can also impact decisions we make about risk.

Risk and Fear

Apparently, we're not all that good at identifying which things might be risky for us, and this is especially true when we need to make a decision about a risk that we have strong feelings about—especially negative feelings. Psychologist Paul Slovic, when interviewed on an episode of the *Hidden Brain* podcast I listened to, said, "our 'feeling system' doesn't do multiplication" ("Afraid of the Wrong Things"). What he meant was that when assessing a risk where the probability that something *bad* will happen is above zero,

Figure 2: A picture of my own eye expressing a fear response.

and we have some strong emotion about that (see above for my feelings about climbing up on tall things), or we perceive the outcome as really negative (in the *Hidden Brain* podcast, an example they gave was being attacked by a shark), our emotions end up overpowering our ability to make objective calculations about the risk.

Risk and Memory

Slovic also explains that "we judge the frequency or the probability of something by how easy it is to imagine it happening or to remember it happening in the past" ("Afraid of the Wrong Things"). This is true for both positive and negative outcomes. This means that emotions associated with our past experiences—but also with stories we might have heard or seen or read—can impact our ability to accurately assess the likelihood of the risk. So . . .

A Lot of Media Exposure about Shark Attacks
=>
How Dangerous We Think Sharks Are

According to Slovic, "something that's a very dramatic event . . . will lead us to have a sense that this thing is frequent or likely, when in fact, statistically, it's very unlikely" ("Afraid of the Wrong Things"). Basically, the level of emotional involvement in imagining or remembering a risk event is much more powerful than our ability to calculate actual risk.

AND OUR BRAINS ARE BAD AT MATH

Even if we're trying to be careful to assess a particular risk, and we're trying to focus on how our emotions impact our decision-making, humans can still struggle with risk assessment because our brains aren't great at calculating how the likelihood of some risks can increase over time. According to the *Hidden Brain* podcast episode I listened to, humans' inability to accurately calculate risk regarding **cumulative assessments** (dangers that build

Figure 3: Getting to the moon on a stack of folded paper ("Afraid of the Wrong Things").

up over time, like pollution or climate change or infectious diseases like COVID-19) and probabilities like **exponential growth** can lead people to ignore the increased likelihood of certain risks ("Afraid of the Wrong Things"). The question and answer above are an example of this (Figure 3). If you ask most people how many times they think you would need to fold a piece of a paper in order to get a thickness that would be able to reach the moon, they will instinctively guess a really high number. But the actual number is forty-five—or forty-two, my second source offered a slightly lower number (Siegel). Slovic says that this is because, when things increase exponentially, the cumulative results increase really fast (Figure 4).

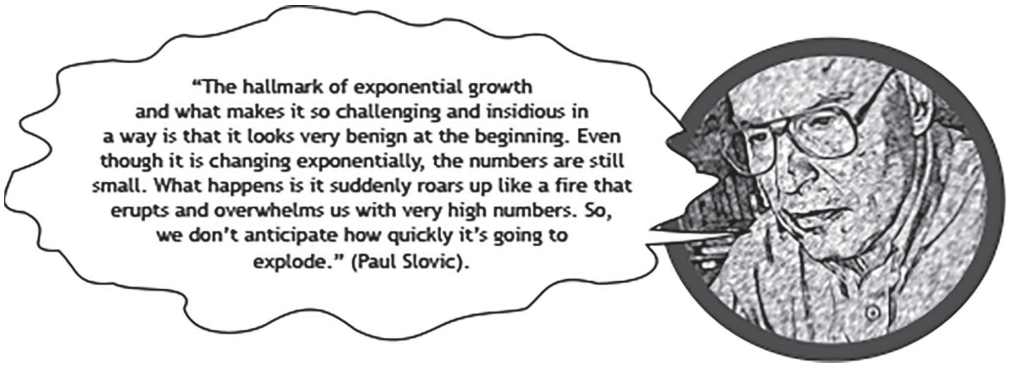

Figure 4: Paul Slovic and exponential growth ("Afraid of the Wrong Things").

IT'S RISKY BUT I'LL BE OK

Control and Optimism Bias In Assessing Risk

I'll Be OK (the Optimism Bias)

Apparently, we also struggle to apply the same standards about risk to ourselves and to others. According to Tali Sharot, a cognitive neuroscientist, most people have a tendency to be more responsive to facts that confirm their positive expectations.

Sharot conducted a study where they asked people to estimate their likelihood of getting cancer, and then she told them the average likelihood of that thing actually happening (say, thirty percent). What they found was that, if people had guessed something like fifteen percent, hearing a higher percentage didn't really change their beliefs. But if the percentage of the bad thing happening (cancer) was lower than their estimate, people revised their estimate downward, to accommodate the good news. The idea behind this **optimism bias** is that humans (generally) tend to be optimistic about themselves (their competence, their abilities) compared to other people (Figure 5). And this bias can also extend to risk.

Figure 5: The optimism bias in action.

I'll Be OK if I'm in Control

And again, according to the *Hidden Brain* podcast I listened to, "People were willing to accept far greater risks for activities that they *chose* over activities that did not involve personal choice. They accepted a higher level of risk for, say, skiing or bungee jumping, but found a similar level of risk unacceptable when it came to things like building safety or the use of preservatives in food" ("Afraid of the Wrong Things").

According to Shankar Vedantam, host of the *Hidden Brain* podcast, the notion of personal control may "help us to understand why some people say they are not worried about becoming ill with the COVID-19 virus but are worried about the safety of the COVID-19 vaccine. You feel you have

control when you go to a restaurant. You convince yourself the risk of the virus is small. But you don't have control over how a vaccine is made. You have to trust the results of studies conducted by scientists whom you will never meet" ("Afraid of the Wrong Things").

THIS IS HOPELESS, RIGHT?

Are There Ways to Get Better at Assessing Risk?

A lot of what I read made me feel like it was kind of hopeless to try to build better risk assessment literacies. So much of our decision-making is unconscious and impacted by our experience and environments in ways we don't realize. So even being more literate about risk—that is, knowing more about how human brains assess risk—doesn't necessarily mean that I'll get better at assessing risk in specific situations, if by *better* I mean that I will somehow become able to assess risk in completely conscious, unbiased ways. Additionally, our emotional biases can cause us to be careless about risk (optimism bias) but also to be risk averse (if we have fear and anxiety about the risk). So, basically, when our emotions get involved, we're at risk of being unable to assess our risk (sigh).

Through doing this research, I realized that human risk assessment is probably actually more related to our writing practices and literate activities that I first thought. I mean, think about the last time an instructor or someone in charge of your work asked you to do something "risky" with your writing (think trying a new genre, doing different kinds of research, creating something that is multimodal, or even something as simple making your writing longer or more complex). I think I could argue that the fear/anxiety people experience in this moment often matches up pretty well with how people assess risk more generally:

- Fear/anxiety makes the risk seem riskier by accentuating the bad thing that might happen if it goes wrong.
- Or, if we are too confident that we know what we're doing, we might mentally erase the possibility that things will go wrong at all. And then we're surprised (and really frustrated) when we get negative feedback.
- In the moment, we're pretty bad at calculating the actual risk (of say, getting a poor grade or having our writing critiqued), so we often depend on emotions to make our decisions about how adventurous we're willing to be in our writing.

So yeah. My risk literacies may not always help me to assess risk accurately. But I figure that one thing I can do is try to be more conscious about using *research* to assess risk while also trying to be more aware of how my emotions and immediate reactions are impacting my decisions. And this research has taught me that as I try to get to know my brain a little better, I can sometimes see (and possibly intervene in) my unconscious risk assessment processes by learning how they work.

As Dan Ariely, Professor of Psychology and Behavioral Economics, says, "We understand our [physical] limitations, and we build around them. I think that if we understood our cognitive limitations in the same way we understand our physical limitations . . . we could design a better world."

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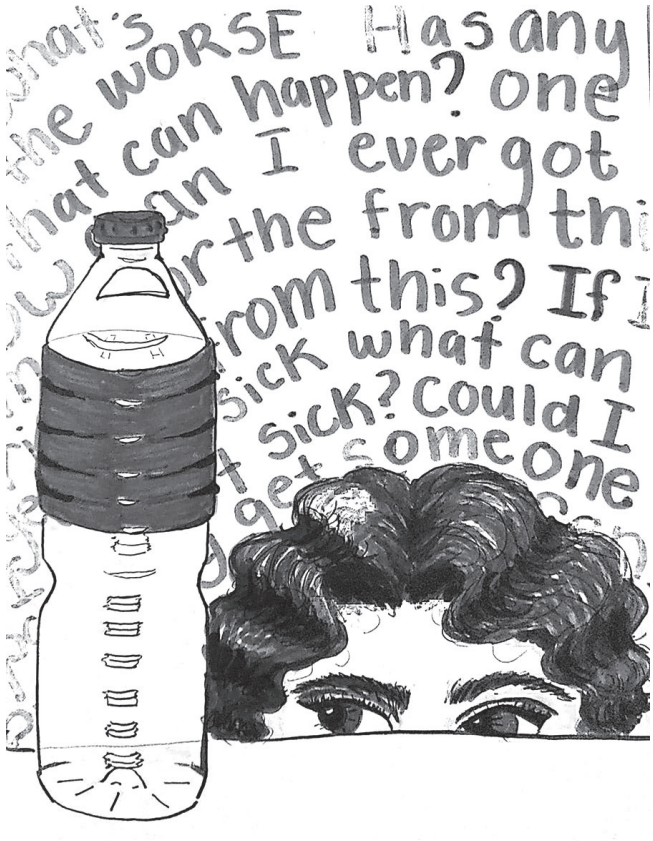
Notes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