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THOUGHT LEADERSHIP

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Understanding Non-Compliance During COVID-19

A Human Factors Perspective on Public Health Messaging

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Despite the widespread provision of information on how to protect ourselves and restrict the spread of COVID-19, many people ignore the latest recommendations and local ordinances by gathering in large groups, crowding public spaces, and failing to wear face coverings in public. While such behaviors may arise out of necessity, why would individuals otherwise choose to act in ways that disregard official and unofficial health advice? Here, science can provide us with critical insight.

Decades of research in cognitive psychology—and its applied counterpart, human factors—tells us that the decision-making process is subjective, highly individualized, and can even vary within the same person depending on the situation (Bettman et al. 1991). Decisions can be complex, but they can also be exceedingly simple—for example, when a person applies what researchers call *heuristics*, or shortcuts, that don't necessarily seek out or consider all available information. Research, and common experience, shows that many of our everyday actions are guided by the *affordances* available—those aspects of a situation that help us accomplish our goals—rather than the *risks* involved—what could happen if things go wrong. This phenomenon, which researchers refer to as "affordance perception," can explain why people might choose to jaywalk, balance on unsteady surfaces to reach high shelves, or text while driving, even while appreciating the risks involved in such actions.

For any type of information to influence a person's decision-making—and consequently, their behavior—several steps must occur. First, the person must be *seeking* and *notice* the information. Extensive research has shown that even otherwise obvious safety information may be missed if the individual is not looking for it (Dorris & Purswell 1977). In general, most people who search for health-related information use more than one source—sometimes as many as three sources or more—and consult both "official" and unofficial sources (Kavanagh et al. 2011). In recent flu outbreaks, people seeking health advisories report primarily relying on members of their direct community, including family, friends, and schools, as well as public health officials (Austin et al. 2012).

Once a message is noticed, it must then be *understood* and interpreted as intended. However, information isn't received in a vacuum. Different people—or even the same person at different times—may interpret a given message differently based on their own prior experiences, beliefs, attitudes, and in-the-moment expectations, as well as their interpretations of other messages they have also reviewed (e.g., Tulving & Schacter 1990, Peters et al. 2011). For example, if a message contradicts one's own experience with the same or a similar hazard, it may be interpreted as overstated. In the case of COVID-19, this could occur if a person has gone to a grocery store several times without contracting the virus, and subsequently comes to believe that the risk of going to other establishments is exaggerated.

Finally, messages that are noticed and interpreted as intended only change behavior if the person is *able* and *motivated* to do so. Even when the message received pertains to health and safety, people may be unwilling to comply if they find the "costs" (in terms of time, effort,

ideals, or convenience) to be too high (Dingus et al. 1991). Additionally, behavior may be influenced by "optimism bias," the belief that one is personally less susceptible than others to negative outcomes (Sharot 2011), such as becoming infected or experiencing virus-related complications.

In the face of such human tendencies, the measures most likely to change behavior may be those that increase the "costs," and reduce the affordances, of not complying. One such measure is enforcement. For example, enforcement through law has been shown to be the most predictive factor in seatbelt use (e.g., Goodwin et al. 2013), but enforcement can be achieved socially as well. Knowing one's behavior is being observed can change compliance rates; researchers have found that even healthcare workers are more likely to wash their hands when they know they are being watched (e.g., Hagel et al. 2015).

The determinants of human behavior are complex and can be highly individualized. Regardless of the information available and the potential consequences, different people may respond differently in the same situation, and even the same person may respond differently in the same situation at different times. Thus, each compliant or noncompliant decision must be considered individually, within the context in which that decision was made. Yet, while the factors that can influence a decision are varied and complex, these behaviors are not random or unique. Understanding perceptual and cognitive factors can provide insight into systematic interactions that give rise to the wide variety of human responses to new information. Such an understanding can assist in evaluations of compliance—or lack thereof—with local public health advisories and restrictions, new guidelines for workplace safety, and warnings on protective supplies like face coverings, masks, and sanitizers.

How Exponent Can Help

Exponent human factors experts have a long history of investigating the communication of risk as a scientific field of inquiry. They bring expertise on human cognition, perception, behavior, and information processing to both the design of warnings and the potential for behavioral change in response to safety messages.

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