



**DIGITAL COGNITION AND
DEMOCRACY INITIATIVE**

MODULATING TRUST

THE DIGITAL COGNITION AND
DEMOCRACY INITIATIVE

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About the Digital Cognition and Democracy Initiative

Digital technology has become a fixture in everyday life. The landscape has dramatically shifted in recent years, increasingly catering to individualized neurochemical reinforcement. Information mediation is now fast-paced, high-volume, low-friction, and extra-sensorial, garnering increasing concern about the impacts digital ubiquity is having on individuals, society, and democracy more broadly.

Documented risks to the individual include impacts on mental health, particularly among young people; the proliferation of false information; and an overreliance on outsourced information. Impacts at the individual level cumulatively manifest in societal level concerns, such as affective polarization—defined as the tendency to distrust people from the opposite end of the political spectrum—and risks to public health as a consequence of disinformation campaigns. While digital technologies are not the sole cause of these concerns, the facilitatory and amplifying role they play is significant. A sound ability to update one's beliefs and to engage in constructive discourse are key elements of civic engagement and therefore healthy democracy. These skills rely on a concert of cognitive processes that are increasingly influenced by rapid and extensive technological proliferation. The urgency of exploring this web of challenges has grown as the risks to individual and societal well-being have become more evident and the threats to democratic society more immediate.

About this series

Through a series of coalition meetings and discussions with our advisory committee over a period of five months, we coalesced around several key overarching themes and a specific set of cognitive operations that are central not only to how democracy functions, but to how we view and engage with our democratic processes and institutions: critical thinking, trust, and emotion.

This report is informed by the DCDI coalition, interviews with related experts, and past and current cognitive science research findings relevant to the human relationship with digital technologies. Unlike the DCDI papers on [memory](#), [attention](#), and [reasoning](#), this series is not meant to review the literature, but to synthesize our thoughts and research on the effects of digital systems on [trust](#), [critical thinking](#), and [emotions](#).

Why Trust?

There is a rich scholarly literature on the various kinds of democracy, including debates about the essential elements of democratic governance. We assume that democratic systems rely on a society with access to critical information and the capacity and freedom to interpret that information to make collective choices. For a democracy to function appropriately, citizens also have to trust that collective choices will result in legitimate authority of the state to govern all citizens. As such, **social trust – trust in other people and institutions** – is critical to the DCDI problem set.

“In the longer term, the feedback loop of lies begetting rumor will threaten the foundation of democracy. Democracy requires trust – including the fundamental trust that losing an election does not mean losing power forever. Not only do conspiracy theories feed on mistrust of authority, they also promote mistrust. If a substantial fraction of Americans believes that their political opponents have become their enemies, then the basis for compromise and accommodation that democratic institutions produce will collapse.”¹

- Paul Musgrave, “Democracy Requires Trust. But Trump Is Making Us All into Conspiracy Theorists.”

But trust is not always beneficial. Although trust in technology can facilitate economic transactions, it can also diminish our capacity for skepticism. Consumers tend to prefer to use technologies that they trust, and sellers and developers of technology find more success when there is more trust in their systems. Yet trust placed too freely in technologies can also generate vulnerabilities for those same consumers—to identity theft, to addiction, to misinformation, and to fraud. Misplaced trust in online information and sources of online information can create vulnerability to disinformation, affective polarization, and anti-democratic behavior.

Relationships of trust determine our relationships to each other in a democracy, to the government of that democracy itself, and to the everyday technologies that we use. As a DCDI participant put it: “when trust is degraded or eroded it’s like a social tax, it makes everything harder [and causes] a drag on democratic processes.”² When social distrust grows, society loses capacity for the kind of collective action essential to democratic governance.

¹ Paul Musgrave, “Democracy Requires Trust. But Trump Is Making Us All into Conspiracy Theorists,” *The Washington Post*, March 7, 2017, <https://www.washingtonpost.com/posteverything/wp/2017/03/07/democracy-requires-trust-but-trump-is-making-us-all-into-conspiracy-theorists/>.

² Expert DCDI Workshop participant, “DCDI Working Group Meeting Notes,” Internal IST Meeting Documentation.

The key findings of the DCDI research into trust include:

- People are increasingly dependent on, and distrustful of, digital technology—however, they don't behave as though they mistrust technology. Rather, people continue to use technology intensively in all aspects of daily life, despite the risks and manipulation of which they are aware.³
- The democratization of truth, the idea that everyone can have their own truth, rather than deriving it from a few reputable sources, can destroy the notion of objectivity and shared beliefs. Instead, people choose beliefs based on group identity and rationalize false beliefs to avoid cognitive dissonance.⁴
- Humans are programmed to trust those closest to them the most. This can also mean trusting those who they identify with the most. This phenomenon can extend to influencers⁵, with nano influencers in particular exploiting the human inclination to trust that which is near and dear, thereby building up devoted followings of like-minded individuals. The role that someone plays within an ingroup perpetuates certain behavior, and thought leaders get bigger rewards (e.g. followers, money through Patreon, or merchandise sales) for promoting more extreme or more polarizing content.
- Digital technologies are affecting the cognitive processes that comprise trust, including [memory](#), [attention](#), and [reasoning](#).

³ Bhaskar Chakravorti, "Trust in Digital Technology Will Be The Internet's Next Frontier, for 2018 and beyond," *The Conversation*, January 3, 2018, <https://theconversation.com/trust-in-digital-technology-will-be-the-internets-next-frontier-for-2018-and-beyond-87566>.

⁴ Andrew Hutchinson, "New Report Shows Universal Distrust in Social Media as a News Source," *Social Media Today*, February 1, 2020, <https://www.socialmediatoday.com/news/new-report-shows-universal-distrust-in-social-media-as-a-news-source/571512/>.

⁵ DCDI workshop discussion, "DCDI Working Group Meeting Notes," Internal IST Meeting Documentation.

*"When it comes to the digital world, it's not just companies that create the industry, and it's not just regulators who determine its security. The vast majority of digital content is user-generated, and much of security and data privacy comes down to how individual users engage with these systems."*⁶

- Bhaskar Chakravortia et al., "How Digital Trust Varies Around the World."

Trust to Operate

As the world becomes increasingly complex and humans are faced with more information than they could ever process, there is a need for mechanisms, or shortcuts, to more efficiently interact with these vast amounts of information. One of these shortcuts is trust: trusting sources and technologies without taking the time and effort to validate each piece of information. It would be impossible to conduct sufficient research to be even minimally confident in most of the information we come by online every day. So instead we trust our favorite social media news source, believing that it is the most accurate; we trust our favorite gamified investing app, believing that it is helping us earn money; we trust strangers on the internet and interact with them, because why else would they be so easy to connect with?

People approach the world via heuristics, which, like trusting certain sources, reduce the amount of effort necessary to parse through a certain amount of information.⁷ Different groups and individuals have different heuristics. Some people are more trusting of medical personnel; seeing a "Dr." or a white lab coat in a social media profile might increase their faith in the content from that profile. Other people might believe, especially after the anti-science conspiracy theories of this pandemic age, that medical professionals are untrustworthy and will react negatively to content coming from them.

However, as much as trust is necessary to operate in our digital age, it can also be quickly shattered by the ambiguous truthfulness of the digital age. We may easily trust certain information online from certain sources, but we also easily doubt potentially credible sources when someone in our circle or in-group suggests, even without evidence, that a photo is doctored or a story is made up. That false severing of truth is also a manipulation tactic, the ability to say "that's not really me" or "that never happened."

⁶ Bhaskar Chakravortia et al., "How Digital Trust Varies Around the World," *Harvard Business Review*, February 25, 2021, <https://hbr.org/2021/02/how-digital-trust-varies-around-the-world>.

⁷ Miriam Metzger and Andrew Flanagin, "Credibility and Trust of Information in Online Environments: The Use of Cognitive Heuristics," *Journal of Pragmatics* Volume 59, Part B (2013): 210-220, <https://www.sciencedirect.com/science/article/abs/pii/S0378216613001768>.

Barriers to Healthy Skepticism

The following human tendencies pose barriers to healthy skepticism of online content and information:

- People over assume the validity of information when it is paired with non specific, non probative imagery.⁸
- People do not realize that, in terms of gaining their trust, the sharer of online content plays a larger role in gaining that trust than the actual content, and even than the original source of the content.⁹ A 2017 American Press Institute survey found that “about half of the people in [their] experiment could recall who had shared the post, but only about 2 in 10 could remember the source of the article.”¹⁰
- Individuals trust information from those closest to them more (see section on [Trust, Community and Siloes](#)).

Trust, Community, and Siloes

The tendency to seek refuge amongst one’s own tribe is a significant part of the digitally-influenced cognition problem as it leads to micro communities, tribalism, and influencers. Geo-propaganda, forums, geofencing, niche groups on social media, and tailored media (like Substack) contribute to increasing digital siloization. These technologies work to alienate-together, separate people into like groups and foster strong relations in those groups, in ways that are profitable for social media companies.

A critical part of this issue is that humans are programmed to trust those closest to them the most. This can also mean trusting those who they identify with the most. Influencers are a part of this phenomenon,¹¹ with nano influencers in particular exploiting the human inclination to trust that which is near and dear, thereby building up devoted followings of like-minded individuals. The role that someone plays within an ingroup perpetuates certain behavior, and thought leaders get bigger rewards (e.g. followers, money through Patreon, or merchandise sales) for promoting bigger and badder concepts. Nano influencers have contributed to

⁸ Elise Fenn et al., “The Effect of Nonprobative Photographs on Truthiness Persists Over Time,” *Acta Psychologica* 144, no. 1 (2013): 207-211, <https://doi.org/10.1016/j.actpsy.2013.06.004>

⁹ “Who shared it?": How Americans Decide What News to Trust on Social Media," *American Press Institute*, 2017, <https://www.americanpressinstitute.org/publications/reports/survey-research/trust-social-media>.

¹⁰ “Who shared it?": How Americans Decide What News to Trust on Social Media," *American Press Institute*, 2017, <https://www.americanpressinstitute.org/publications/reports/survey-research/trust-social-media>.

¹¹ DCI workshop discussion, “DCI Working Group Meeting Notes,” Internal IST Meeting Documentation.

disinformation, and many are rewarded for their extremism within their siloed communities. It seems that influencers and digital technologies are types of trust intermediaries that influence via emotional manipulation. Influencers, of course, are a product of digital technologies themselves, and they thrive off the ecosystem created by these systems by maintaining attention, heightening emotions, and creating positive memories with their technology to keep people coming back. As one DCDI participant noted, we “perceive good intentions from people we trust.”

The tendencies described above create concerning breeding grounds for affective polarization or “the tendency for partisans to dislike and distrust those from the other party.”¹² As digital technologies encourage us to trust those similar to us more, and those different than us less, then we become vulnerable to in-group messages that villainize out-groups, accelerating affective polarization.

System 1 and System 2 Dynamics and Trust

There are two basic cognitive mechanisms that help people determine what and who we trust: the automatic System 1 and the labor-intensive System 2.

“System 1 operates automatically and quickly, with little or no effort and no sense of voluntary control.

System 2 allocates attention to the effortful mental activities that demand it, including complex computations. The operations of System 2 are often associated with the subjective experience of agency, choice, and concentration.”¹³

- Daniel Kahneman, *“Thinking, Fast and Slow.”*

Trust facilitates System 1. The vast and ever-expanding amount of available information makes the use of System 2 thinking highly impractical, even impossible, for all the digital information we are exposed to. Rather, we increasingly depend on System 1, because it is easier, more efficient, and often brings us in agreement with our community and those closest to us. The role of System 1 and System 2 thinking on reasoning and trust and digital systems is further explored in Stephanie Rodriguez’s DCDI paper, [“Reasoning: How digital technologies influence decision making and judgment.”](#)

¹² James Druckman et. al, “Affective Polarization, Local Contexts and Public Opinion in America,” *Nature Human Behavior* 5 (2021): 28–38, <https://www.nature.com/articles/s41562-020-01012-5>.

¹³ Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus, and Giroux, 2011), <https://www.scientificamerican.com/article/kahneman-excerpt-thinking-fast-and-slow/>.

Trust Transfer

One area of interest in DCDI research has been the phenomenon of ‘trust transfer,’ or the idea that trust in one entity can be transferred to another. This transfer happens when an unknown entity is perceived as being related or adjacent to a trusted entity. Studies of trust transfer in online commerce have shown that users transfer trust they have in a platform itself to sellers on the platform, even if they have never interacted with them.¹⁴ In the context of social media, this effect can be expanded to users transferring trust in the platform to other users on the platform. In this version of trust transfer, the users putting out content could be seen as sellers.

Areas for Future Research: Encouraging Healthy Skepticism

The DCDI coalition focused on problem identification, building hypotheses, and developing a core set of indicators. But more fundamental research is needed to explore the links between emotions and digital technologies. Some of the questions that future research must explore include:

- How can a healthier skepticism of digital systems be fostered?
- How can technology be used to increase trust in democratic institutions, rather than decrease it?
- How do we scale efforts to build trust?
- How can people be encouraged to trust trustworthy organizations, institutions, and people, and distrust the untrustworthy?
- Are there trust deficits? What would people be trusting more and how can that be encouraged?

We are not suggesting that humans must be skeptical at all times, or even that it is reasonable to do so. The problem we are unpacking centers on how the underlying cognitive processes needed for trust are affected by technologies, modulating the very building blocks of trust. Digital systems are accelerators of trust building, but also of trust degradation.

¹⁴ Katherine J Stewart, "Trust Transfer on the World Wide Web," *Organization Science* 14, no. 1 (2003): 5-17, <https://doi.org/10.1287/orsc.14.1.5.12810>; Daniel Belanche et al., "Trust Transfer in the Continued Usage of Public E-Services," *Information & Management* 51, no. 6 (2014): 627-640.

Our conversations and research have made clear that there is inherent value in encouraging people to be more skeptical, despite its inefficiency and ostensible inconvenience. Digital systems are accelerators of trust building, but also of trust degradation. Our ever-digital world, rife with false and misleading information, requires us to be far more prudent and protective of our trust. It is crucial that people are made aware of the various ways our digital life manipulates and shortcuts our trust, the repercussions of that interaction, and proper preventative and mitigation strategies.