Trust and Contested Beliefs:

The Role of Actively Open-Minded Thinking

Keith E. Stanovich

University of Toronto

Maggie E. Toplak

York University

Corresponding author: Keith E. Stanovich, Department of Applied Psychology and Human Development, University of Toronto, 252 Bloor St. West, Toronto, Ontario, Canada M5S 1V6; email: keith.stanovich@utoronto.ca

Second author: Maggie E. Toplak, Department of Psychology, York University, Toronto, Ontario, Canada M3J 1P3; email: mtoplak@yorku.ca

Abstract

Skeptical attitudes related to trust are often a two-edged sword when it comes to adjudicating contested beliefs of various types. Skepticism regarding official explanations and reliance on gut feelings about hidden causal forces can lead people to question conclusions from knowledge institutions—conclusions that are often justified because proper scientific procedures have been used. On the other hand, the very same skeptical attitudes can protect people from government propaganda concocted for political reasons independent of evidence. We report here some preliminary empirical results that suggest that actively open-minded thinking (AOT), a disposition studied in the reasoning literature, can avoid this trade-off. That is, it appears to be a one-edged sword. It seems to be a psychological disposition that is uniquely associated with warranted conclusions, while simultaneously showing negative associations with contested beliefs not properly grounded in a triangulating empirical process.

Keywords: actively open-minded thinking, thinking dispositions, ideology, epistemic attitudes, contested knowledge

Trust and Contested Beliefs:

The Role of Actively Open-Minded Thinking

Trust in societal institutions and skepticism toward them are both two-edged swords. Skepticism regarding official explanations can lead people to question conclusions from knowledge institutions that are often justified because proper scientific procedures have been used. On the other hand, the very same skeptical attitudes can protect people from government propaganda concocted for political reasons independent of evidence. Trust in institutions can guarantee that the epistemic accuracy of reliable societal institutions can be utilized, but it also makes one vulnerable to the propagandistic tendencies of governments and corporations.

We have some preliminary empirical results that suggest that actively open-minded thinking (AOT), a disposition studied in the reasoning literature, can help to avoid this trade-off. That is, it appears to be a one-edged sword. It seems to be a psychological disposition that is uniquely associated with warranted conclusions, while simultaneously showing negative associations with contested beliefs not properly grounded in a triangulating empirical process.

The Actively Open-Minded Thinking Disposition

The measurement of AOT has been refined over the years. Baron (1985, 1988, 1993) first named and discussed AOT as an important thinking disposition, and Stanovich and West (1997) produced the first AOT scale that was used widely. In that scale, AOT was conceptualized as a thinking disposition encompassing the cultivation of reflectiveness rather than impulsivity; the desire to act for good reasons; tolerance for ambiguity combined with a willingness to postpone closure; and the seeking and processing of information that disconfirms one's beliefs. The items on that initial version tapped reasoning styles such as the willingness to consider evidence contradictory to beliefs with items such as "People should always take into consideration evidence that goes against their beliefs"; the

willingness to consider alternative opinions and explanations ("A person should always consider new possibilities"); and the willingness to postpone closure ("There is nothing wrong with being undecided about many issues").

The scale was a marker for the avoidance of epistemological absolutism; willingness to perspective-switch; and the tendency to consider alternative opinions and evidence. Revisions in AOT scales continued throughout the next two decades. By 2007, the scale had ballooned to 41 items (Stanovich & West 2007), later shortened to 30 items in the Comprehensive Assessment of Rational Thinking (Stanovich et al. 2016), and then to 13 items by Stanovich and Toplak (2023), which is the scale we employ here. The content of this scale is more conceptually coherent than previous AOT scales (see Stanovich & Toplak, 2023, and also Newton et al., 2023).

The Present Study: Trust-Related Attitudes and Contested Knowledge

In the present study, we examined political attitudes related to trust which have epistemic consequences—for example, skeptical stances such as anti-establishment attitudes (Enders & Uscinski, 2021) and belief in hidden causal forces (Oliver & Wood, 2014), as well attitudes that can result in overly credulous epistemic stances, such as the tendency to uncritically accept government claims (Stanovich & Toplak, 2025b). The present study also examines a variety of psychological attitudes that have been shown to be associated with negative outcomes: paranormal thinking (Bensley et al., 2020, 2022; Dagnall et al., 2025; Lobato et al., 2014; Srol, 2022; Ståhl & van Prooijen, 2018); the Dark Triad (Furnham et al., 2013); and paranoia (Bowes et al., 2023; Imhoff & Lamberty, 2018). Because Costello et al. (2022) have linked various political attitudes to partisan intolerance and the endorsement of political violence, we included a measure of anti-democratic tendencies and a measure of the endorsement of political violence in the study.

We also examined a consequence of epistemic attitudes: belief in so-called "legacy" or "mature" false conspiracies (Keeley, 1999). Mature false conspiracy beliefs are conspiracies that have been posited and investigated over a considerable period of time. The length of time such conspiracies have been investigated without positive conformation of their actual existence becomes evidence that such beliefs are ill-founded (Dentith, 2022; Keeley, 1999). Mature conspiracy beliefs are differentiated from newly appearing conspiracy beliefs that are in more of an epistemic limbo, due to the fact that conspiracies do happen (Pigden, 1995, 2024). Thus, specific *contemporary* conspiracy beliefs are not inevitably false and are in a broad class of beliefs that we term contested beliefs or contested knowledge, a class that we also examine in the study.

Information may be contested in many ways. There may be disputes within knowledge elites (experts) themselves. There may be disputes within the public. And then there may be disputes between the public and segments of the expert class. Thus, what we call contested knowledge claims represent a large and varied class of propositions. Evidence on either side of the proposition need not be equal. Some of the propositions we test have more converging evidence on one side than the other. However, we use the term in a relativistic sense of meaning only that some proportion of the population is committed to one side of the proposition and some proportion of the population is committed to the other. Propositions often become contested for partisan reasons. For example, we studied some contested information claims that, on one side of the partisan divide are considered "facts," and on the other side of the partisan divide are thought to be "misinformation".

AOT and Ideology as Correlated Predictors

The relationships between performance on the AOT and the ideological variables in the study are presented in Table 1. One recurring complicating factor in interpreting relationships involving AOT is that it has consistently shown robust relationships with political ideology and ideology-related variables such as

religiosity and party affiliation (Baron et al., 2015; Bonafé-Pontes et al., 2025; Pennycook et al., 2020; Piazza & Landy, 2013; Stanovich & Toplak, 2019; Yilmaz & Saribay, 2017). Liberal respondents and those with left-wing political affiliations score higher on AOT scales, as do those lower in religiosity. Both Stanovich and Toplak (2019) and Pennycook et al. (2020) have demonstrated that correlations with ideology and religiosity can be inflated by items using the word "belief" in AOT items. Nonetheless, a relationship between liberalism/left-wing ideology and AOT scores in the range of .20-.40 remains even when scales are edited to remove the word belief (see Stanovich & Toplak, 2019, for a discussion of this effect).

Table 1 indicates that there was a positive .356 correlation between the ideology composite variable and the score on the AOT scale, indicating that liberals tended to score higher on the AOT than did conservatives. The magnitude of the relationship is consistent with past research showing that it is usually in the range of .20 to .40 with versions of the AOT that do not employ the problematic belief language (Stanovich & Toplak, 2019). Table 1 also indicates that the relationship with AOT is stronger for social liberalism than with economic liberalism. This is consistent with past research showing that social and economic ideology often display different correlations (Carl, 2015; Carl et al., 2016; Pennycook et al., 2020; Stanovich & Toplak, 2019; Yilmaz & Saribay, 2017). Table 1 also indicates a relationship between AOT and political party affiliation that is somewhat lower (.269) than that with ideology. Democrats scored higher on the AOT than did Republicans and Independents.

In the present study, we examined the issue of whether the AOT is more than just a proxy for a political ideology. For example, it is of course well-known that ideological liberalism is negatively correlated with right-wing authoritarianism (RWA; Altemeyer, 1981, 1996; Bizumic & Duckitt, 2018); however, ideological liberalism is *positively* correlated with left-wing authoritarianism (LWA; Conway

et al., 2018; Costello et al., 2022). Because AOT correlates with ideological liberalism, it thus becomes important to know whether AOT is likewise positively correlated with LWA. Because authoritarianism is the antithesis of open-minded thinking, such a positive correlation would undermine AOT's status as a meaningful psychological construct. It would mean that AOT was simply a proxy for the political attitude of liberalism. In contrast, should AOT dissociate from liberalism in the case of LWA (that is, correlate negatively with LWA, or even fail to correlate), it would bolster AOT's status as an important epistemic disposition and refute the notion that it is merely a proxy for a particular political attitude.

As Table 1 indicates, all of the measures of ideology and partisanship displayed strong negative correlations (from -.478 to -.618) with right-wing authoritarianism (RWA). Liberals/Democrats scored lower on the RWA scale. Thus, it is not surprising that the AOT displayed a substantial negative correlation with RWA (-.474). What is notable, however, are the pattern of relationships displayed by the left-wing authoritarianism (LWA) variable. Here, the partisan/ideological variables displayed low/moderate *positive* correlations with LWA (from .288 to .316). Because liberals/Democrats scored higher on the LWA scale, and because the AOT is moderately correlated with liberalism/Democratic party affiliation, it might be expected that those scoring higher on the AOT scale would also score higher on the LWA. But as the table indicates, that was not the case. AOT scores were negatively correlated with scores on the LWA scale, and significantly so (-.195). This creates a pattern where the AOT is negatively correlated with *both* types of authoritarian thinking (RWA and LWA). While it is true that AOT is correlated with liberal ideology, it seems to be associated with the parts of liberal ideology that do not create authoritarian thinking of the left-wing variety.

Table 2 again displays the pattern of AOT, but not liberal ideology, tracking adaptive behavioral and psychological states. The correlations involving several

variables that associate with epistemic accuracy and adaptive behavior are displayed. The first row indicates that paranormal thinking, a strong correlate of unjustified beliefs (Bensley et al., 2022; Ståhl & van Prooijen, 2018; Stanovich & Toplak, 2025a), displayed a substantial negative correlation with AOT (-.381), but a correlation with ideology of only -.076 (barely significant at the .05 level). Ideology did not display a significant correlation with the Dark Triad composite and correlated significantly only with the Machiavellianism compartment—and in this particular case, the correlation was in the direction of liberal subjects displaying more Machiavellianism. In contrast, the AOT displayed a *negative* correlation with the Dark Triad composite (-.274) and correlated significantly in the negative direction with each of the three Dark Triad components. Likewise, ideology did not correlate significantly with responses on the Paranoia scale, but the AOT displayed a substantial -.336 correlation.

Neither ideology nor the AOT correlated with anti-establishment attitudes (the AEA scale), one of the indicators of a skeptical, low-trust political attitude. Liberal ideology displayed a significant negative correlation with the Hidden Causal Forces scale (HCFS) and a significant positive correlation with scores on a Government Credulity scale. That is, liberal ideology is associated with avoiding excessive skepticism (measured by the HCFS) but is *positively* correlated with displaying excessive credulity. Interestingly, the AOT displays significant negative correlations with *both* the HCFS and Government Credulity scales. That is, those scoring highly on the AOT tend to avoid excessive distrust and *also* avoid excessive trust. Again, to repeat the point, the AOT has a substantial correlation with liberalism (see Table 1). However, across the many different variables in Table 2, it is the AOT, not liberalism itself, that strongly tracks healthy psychological and political attitudes, and those fostering epistemic accuracy. The last line of the table indicates that ideology and AOT show similar moderate negative correlations with a measure of religiosity.

In Table 3, we examine the predictors of performance on the mature conspiracy belief items. The first column examines the predictors of the ability to discriminate true from false mature conspiracy beliefs. Political liberalism displayed a positive correlation with discrimination ability (.211), but the correlation of discrimination ability with the AOT was even higher (.362). Most of the remaining variables displayed negative or nonsignificant correlations.

The next two columns present correlations with the endorsement of false conspiracy beliefs and true conspiracy beliefs, respectively. Looking at the sign of the correlations here is instructive. An adaptive psychological variable would be one that is positively correlated with the endorsement of true conspiracy beliefs and negatively correlated with false beliefs. The AOT is the only variable that displays this pattern. Two of the variables (ideology and the Government Credulity scale) display the desired negative correlation with false conspiracy beliefs, but they are also negatively correlated with the belief in true conspiracies (strongly so in the case of government credulity). Several variables display the desired positive correlation with true conspiracy beliefs but also have positive correlations with false conspiracy beliefs (the Dark Triad and its components, paranoia, paranormal beliefs, the HCFS, and the AEA scale). Finally, religiosity displays the non-adaptive pattern of showing positive correlations with belief in false conspiracies and negative correlations with belief in true conspiracies.

Thus, every possible pattern of signed correlations is displayed in Table 3, but only the AOT displays the adaptive pattern of a negative correlation with false belief and a positive (albeit, not significant) correlation with true belief. It is thus unsurprising that AOT displays the strongest positive correlation with discrimination ability. Note the complementary pattern of HCFS/AEA versus the Government Credulity scale. The skeptical attitudes of HCFS/AEA are adaptively correlated in one case (true conspiracies) but not the other (false conspiracies). Likewise, the trustful attitude of government credulity is adaptively correlated in

one case (false conspiracies) but not the other (true conspiracies). High levels of AOT, on the other hand, do not trade off in this manner.

Table 4 displays the correlates of anti-democratic attitudes and the tendency to support political violence. Here again, the AOT scale stands out. It is the only variable that displayed significant negative correlations with each of the criterion variables. With one exception, all of the other predictors displayed positive correlations with the two criterion variables. The religiosity composite was the exception, displaying two nonsignificant negative correlations. Some of the positive correlations were not statistically significant in the case of anti-democratic attitudes, but all of the positive correlations with the endorsement of political violence were statistically significant. The tendency to display credulity toward government actions was a particularly strong correlate of anti-democratic attitudes, followed by liberal political ideology. Overall, it is notable that even though the AOT is positively correlated with liberal ideology, and that liberal ideology is positively related to anti-democratic attitudes and the endorsement of political violence, the AOT displayed significant negative correlations with both of these variables. The part of liberal ideology that the actively open-minded mindset is related to is not the problematic part of the ideology that leads to anti-democratic tendencies or to support for political violence.

AOT, Ideology, and Contested Knowledge Claims

We now turn to the contested knowledge claims. Political scientists have long known that facts can be made either more difficult or easier to discern if they are politicized (Klein, 2011; Klein & Buturovic, 2011; Lupia, 2016). This is what makes the assessment of civic knowledge and political misperceptions so difficult (Bullock & Lenz, 2019; Graham, 2023; Kuklinski & Quirk, 2001). Because the positive correlation between AOT and liberalism has long been empirically established, in order to more easily examine possible convergences and disassociations between the two in their predictive relationships, we chose highly

contested propositions likely to be endorsed by liberals[1]. By using such contested claims, we were able to see whether AOT and ideology would consistently dissociate in the epistemic domain.

Table 5 displays how ideology and AOT scores correlate with various contested beliefs. The first item was: "The attempted assassination of Donald Trump in Pennsylvania in July, 2024 was a fake assassination staged by the Trump campaign to generate sympathy for him". As a contemporary conspiracy belief, it seems to be a fairly unlikely one, but nevertheless it was endorsed at some level by 28.7% of our sample. More importantly, it posits a plot that impugns the motives of the Trump campaign. Table 5 indicates that this property creates a moderate .343 correlation between belief in the proposition and ideology in the expected direction: liberals found the proposition more believable than did conservatives. Interestingly though, AOT scores were significantly *negatively* correlated with belief in the proposition (-.152). This is true despite the fact that the AOT is moderately correlated with ideology (see Table 1).

The next item in Table 5 is an item that has been studied by Shermer (2022; McCaffree & Saide, 2022). It is a claim that there is profound systemic discrimination embedded in long-term institutional structures that still operate today to produce discrimination: "The way the founders of the United States set things up ensures that, even today, only whites can be truly free and successful." Although the claim is rather absolute and sweeping, it was endorsed at some level of agreement by 36.8% of our sample. More importantly, it is proposition containing a profound critique of American society and thus is more likely to be endorsed by liberal respondents, as indicated by the positive .350 correlation in Table 5. However, as with the previous item, the positive correlation was not mimicked by performance on the AOT scale, which showed a nonsignificant negative relationship (-.065).

The third item is another statement studied by Shermer (2022; McCaffree & Saide, 2022) that claims profound systemic discrimination embedded in long-term institutional structures that still operate today to produce discrimination, but this time the discrimination is based on sex: "The way the founders of the United States set things up ensures that, even today, only men can be truly free and successful." The claim was endorsed at some level agreement by 40.6% of our sample. Its critique of the founding of the United States is more likely to be endorsed by liberal respondents, as indicated by the positive .387 correlation in Table 5. However, as with the previous item, the positive correlation was not mimicked by AOT, which showed a nonsignificant negative relationship (-.035).

The fourth item proposes that there is racial discrimination in admissions at prestigious universities: "Prestigious universities conspire to keep out minority students". In light of the decades-long existence of affirmative action programs at such universities (Bowen & Bok, 1998), the proposition seems dubious, but perhaps those endorsing the proposition have in mind earlier time periods, rather than the present. The sample contained 230 individuals (33.7% of the sample) who endorsed the proposition at some level of agreement, and they were more likely to be liberal ideologically (correlation with ideology composite = .235). However, when it comes to the AOT, despite its positive correlation with liberalism, high scorers are more likely to *oppose* the proposition, resulting in a significant *negative* correlation (-.213).

The fifth item is similar to the fourth, but in this case proposes that there is sex discrimination in getting a university degree: "Women are discriminated against in getting a university degree". In light of statistics indicating that women have earned the majority of university degrees for a couple of decades (Hurst, 2024), the proposition seems implausible, but perhaps those endorsing the proposition have in mind earlier time periods, rather than the present. The sample contained 263 individuals (38.6% of the sample) who endorsed the proposition at

some level of agreement, and they were more likely to be liberal ideologically (the correlation with the ideology composite was a quite substantial .488). However, the correlation with AOT was nonsignificant, although positive (.061).

Item six posits a conscious conspiracy to disadvantage women: "Men secretly agree among themselves to keep women down". The sample contained 188 individuals (27.6% of the sample) who endorsed the proposition at some level of agreement, and they were more likely to be liberal ideologically (correlation with the ideology composite = .230). However, when it comes to the AOT, despite its positive correlation with liberalism, high scorers are more likely to oppose the proposition, resulting in a significant negative correlation (-.189).

Sometimes trust in social institutions can be undermined because systems become so complex and interactive that they are hard to trace and thus tend to spawn beliefs in systemic collusion. Uscinski (2020, pp. 92-95) discusses the logic of beliefs in so-called "long term rigging". Item seven tapped this kind of belief: "Whites and Asian-Americans rig the economy so that they come out on top." Although the statement might seem dubious, the sample contained 126 individuals (18.5% of the sample) who endorsed the proposition at some level of agreement, and they were significantly more likely to be liberal ideologically (correlation with ideology composite = .141). However, when it comes to the AOT, despite its positive correlation with liberalism, high scorers were more likely to *oppose* the proposition, resulting in a significant *negative* correlation (-.226).

Item eight is a factual proposition that has been the subject of much misleading commentary: "American institutions are designed to pay women substantially less than men for doing exactly the same work." Economic research on the issue emphasizes the "same work" caveat on the proposition and tends to apply stringent statistical controls to make sure the caveat is achieved. When this is done, there is little evidence that, currently, women receive less pay for carrying out the same work with the same qualifications (CONSAD Research Corporation

2009; Kolesnikova & Liu 2011; O'Neill & O'Neill 2012; Phelan 2018).
Nevertheless, political communications often emphasize the proposition that
"women make 84 cents for every dollar a man makes in the workplace" (eliding
the critical comparative feature that the comparison should be conditionalized on
doing the same work if the phrase is to be interpreted as an indicator of
discrimination). It is not surprising then, that many people would ignore the "equal
work" provision in proposition eight. It is likely that this was the case in our study,
as 68.0% of the sample endorsed the proposition at some level of agreement.
Endorsement was a potent trend among liberals in our sample, as ideology
displayed a positive .393 correlation with endorsement. Despite the strength of this
trend toward liberal endorsement of the proposition, and the fact that AOT
correlated .356 with liberalism (see Table 1), the AOT itself displayed no
correlation with endorsement of this proposition (.011).

The last item is a factual proposition: "Most living white Americans are
descended from people who owned American slaves." The statement is a
substantial exaggeration (research queries to AI chatbots produce no evidence that
the percentage is above 10%). However, politicized narratives of white culpability
may have made some people prone to believe the overstatement. Indeed, 46.3% of
the sample endorsed the proposition at some level of agreement, and they were
significantly more likely to be liberal ideologically (correlation with ideology
composite = .230). However, when it comes to the AOT, despite its positive
correlation with liberalism, high scorers were more likely to disagree with the
statement, resulting in a significant *negative* correlation (-.176).

AOT as a Unique Predictor of Healthy Psychological Attitudes

As suggested in the Introduction, both low-trust attitudes (AEA and HCFS)
high-trust attitudes (government credulity) have proven to be two-edged swords in
this study. The skeptical attitudes reflected in the AEA and HCFS scales resulted
in hefty correlations with the ability to detect actual conspiracies (.493 and.485,

respectively, see Table 3). However, both attitudes were *also* strongly correlated with the endorsement of false conspiracies (.478 and .768, respectively). This contrasts with attitudes reflective of excessive trust, like those measured on the Government Credulity scale, which are associated with the avoidance of false conspiracy beliefs (-.123), but *also* impede the recognition of true conspiracies when they occur (-.352).

Actively open thinking, in contrast, is a single-edged sword, tracking epistemically adaptive traits of many different kinds. For example, performance on the AOT shows significant negative correlations with a host of variables that disrupt epistemic rationality (e.g., paranormal beliefs, paranoia, the Dark Triad, see Table 2) but the ideology composite variable either does not correlate with these variables or correlates in the wrong direction (see Table 2). Actively open-minded thinking, in contrast, is negatively correlated with highly skeptical attitudes like the HCFS (-.261, Table 2) and *also* negatively correlated with highly credulous attitudes such as those measured on the Government Credulity scale (-.192, Table 2). Liberalism itself is correlated negatively with RWA and positively with LWA (see Table 1), whereas AOT is correlated negatively with *both* RWA and LWA.

Liberalism and the AOT were the only variables in the study that significantly correlated in the positive direction with the ability to discriminate true from false conspiracy beliefs, but the AOT displayed a significantly larger correlation ($t(679) = 3.71$, $p < 0.001$; Steiger [1980] test for dependent correlations). The ideology composite, and most other variables, displayed significant positive correlations with both anti-democratic attitudes and the tendency toward political violence, whereas the AOT displayed significant negative correlations with both of these variables.

The contested beliefs examined in the study were designed to be enticing to liberal/left-wing respondents and thus to address the question of whether high AOT intensified or attenuated belief in ideologically-linked contested propositions. The

results indicate that, as deliberately designed, all of the contested belief items had substantial positive correlations with liberalism (see Table 5). This data pattern then set the baseline for looking at the AOT correlations with the contested beliefs, and in no case did AOT correlate positively and significantly with a contested belief (7 of the 9 correlations were negative and 5 of the 9 were significantly negative). In all nine cases, the correlation with AOT was significantly lower than that with ideology (Steiger [1980] test for dependent correlations; all $ps < .001$). Clearly, the overall pattern is that, when contested information is highly partisan, high AOT scores are associated with the ability to avoid the partisan lure[2].

What is the property of AOT that allows it to align with the adaptive side of behavioral and epistemic variables even when the ideology with which it is associated, liberalism, does not? Our conjecture is that it is the decontextualizing and decoupling features of AOT that allow high AOT thinkers to escape the trap of partisanship. Partisanship saturates the reasoning process with the priors of a particular ideology. Avoiding ideology-saturated reasoning requires, in contrast, detaching from partisanship as a source of one's priors. This is an uncommon form of reasoning, as is perspective-taking, its close cousin.

Detaching, decontextualizing, and perspective-taking are uncommon forms of reasoning because they involve a cognitively demanding process that has been termed cognitive decoupling (Oaksford & Chater 2012; Stanovich, 2004, 2011; Stanovich & Toplak, 2012, 2023). Decoupling serves to prevent our representations of the real world from becoming confused with representations of imaginary situations. The process involves a sort of distancing from what we currently believe, and that is why it is a rare mental style. But AOT scales may be measuring the tendency to employ it.

For example, many belief revision items on AOT scales require the subject to hold an existing belief in abeyance while simulating the effect of new information on the original belief ('People should revise their conclusions in

response to relevant new information")—classic cognitive decoupling. Other AOT items tap the willingness to consider possibilities beyond the focal model that is in the mind: "Considering too many different opinions often leads to muddled thinking" (reverse-scored), "Changing your mind is a sign of weakness" (reverse-scored), and "A person should always consider new information". AOT scales capture global attitudes that make people more willing to decouple from strong default responses and to consider new and/or conflicting evidence. One of the strongest automatic responses, when the issues involved are political, is to default to partisanship. Based on our results, that default seems weaker in high AOT people, allowing them to focus more on diagnostic evidence when evaluating information.

Thus, cognitive decoupling is perhaps the key cognitive attitude that allows AOT to signal healthy epistemic attitudes. It is the key mechanism that allows a reasoner to avoid the Scylla of excessive skepticism and the Charybdis of excessive credulity. Too little trust, and too much trust, are both associated with suboptimal behavioral traits, as our study has shown. Fostering high AOT in citizens may well be a way that society can structure itself so that it more optimally calibrates trust.

Footnotes

1. The use of highly contested liberal propositions is more diagnostic because just one component of AOT (the tendency for those high in AOT to be skeptical of unproven propositions) leads to disagreement with the proposition; whereas highly contested conservative propositions might be resisted by those high in AOT because of accuracy considerations, but also because of ideological considerations.

2. AOT thus serves as a suppressor variable for ideology. When AOT is controlled, liberalism is more strongly correlated with each of the nine contested beliefs in Table 5, compared with its zero-order correlation. The same was true when anti-democratic attitudes and political violence are predicted from AOT and ideology.

Acknowledgements

References

Altemeyer, R. A. (1981). *Right-wing authoritarianism*. Winnipeg: University of Manitoba Press.

Altemeyer, R. A. (1996). *The authoritarian spectre*. Cambridge, MA: Harvard University Press.

Baron, J. (1985). *Rationality and intelligence*. Cambridge: Cambridge University Press.

Baron, J. (1988). *Thinking and deciding (First Edition)*. Cambridge, MA: Cambridge University Press.

Baron, J. (1993). Why teach thinking?--An essay. *Applied Psychology: An International Review, 42*, 191-214.

Baron, J., Scott, S., Fincher, K., & Metz, S. E. (2015). Why does the Cognitive Reflection Test (sometimes) predict utilitarian moral judgment (and other things)? *Journal of Applied Research in Memory and Cognition*, *4*, 265-284.

Bensley, D. A., Lilienfeld, S. O., Rowan, K. A., Masciocchi, C. M., & Grain, F. (2020). The generality of belief in unsubstantiated claims. *Applied Cognitive Psychology, 34*(1), 16-28. doi:https://doi.org/10.1002/acp.3581

Bensley, D. A., Watkins, C., Lilienfeld, S. O., Masciocchi, C., Murtagh, M. P., & Rowan, K. (2022). Skepticism, cynicism, and cognitive style predictors of the generality of unsubstantiated belief. *Applied Cognitive Psychology*, *36*(1), 83-99. doi:https://doi.org/10.1002/acp.3900

Bizumic, B., & Duckitt, J. (2018). Investigating right wing authoritarianism with a Very Short Authoritarianism scale. *Journal of Social and Political Psychology, 6*(1), 129-150. doi:10.5964/jspp.v6i1.835

Bonafé-Pontes, A., Costa Bastos, R., & Pilati, R. (2025). Actively open-minded thinking about evidence (AOT-E) Scale: Adaptation and evidence of validity in a Brazilian sample. *Judgment and Decision Making, 20*, e3. doi:10.1017/jdm.2024.37

Bowen, W. G., & Bok, D. (1998). *The shape of the river: Long-term consequences of considering race in college and university admissions*. Princeton, NJ: Princeton University Press.

Bowes, S. M., Costello, T. H., & Tasimi, A. (2023). The conspiratorial mind: A meta-analytic review of motivational and personological correlates. *Psychological Bulletin, 149*(5-6), 259-293. doi:10.1037/bul0000392

Bullock, J. G., & Lenz, G. (2019). Partisan bias in surveys. *Annual Review of Political Science, 22*, 325-342.

Carl, N. (2015). Cognitive ability and political beliefs in the United States. *Personality and Individual Differences, 83*, 245-248. doi:10.1016/j.paid.2015.04.029

Carl, N., Cofnas, N., & Woodley, M. A. (2016). Scientific literacy, optimism about science and conservatism. *Personality and Individual Differences, 94*, 299-302.

CONSAD Research Corporation, (2009, January 12). An analysis of the reasons for the disparity in wages between men and women. *U.S. Department of Labor*, Contract Number GS-23F-02598.

Conway, L., G., Houck, S., C., Gornick, L., J., & Repke, M., A. (2018). Finding the Loch Ness monster: Left-wing authoritarianism in the United States. *Political Psychology, 39*, 1049-1067.

Costello, T. H., Bowes, S. M., Stevens, S. T., Waldman, I. D., Tasimi, A., & Lilienfeld, S. O. (2022). Clarifying the structure and nature of left-wing authoritarianism. *Journal of Personality and Social Psychology, 122*(1), 135-170.

Dagnall, N., Denovan, A., Drinkwater, K. G., & Escolà-Gascón, Á. (2025). Paranormal belief and conspiracy theory endorsement: Variations in adaptive function and positive wellbeing. *Frontiers in Psychology, 16*. doi:10.3389/fpsyg.2025.1519223

Dentith, M. R. X. (2022). Suspicious conspiracy theories. *Synthese, 200*(3), 243. doi:10.1007/s11229-022-03602-4

Enders, A. M., & Uscinski, J. E. (2021). The role of anti-establishment orientations during the Trump presidency. *The Forum, 19*(1), 47-76. doi:doi:10.1515/for-2021-0003

Furnham, A., Richards, S. C, & Paulhus, D. L. (2013). The Dark Triad of personality: A 10-year review. *Social and Personality Compass*, 7, 199-216.

Graham, M. H. (2023). Measuring Misperceptions? *American Political Science Review, 117*(1), 80-102. doi:10.1017/S0003055422000387

Hurst, K. (2024, November 18). U.S. women are outpacing men in college completion, including in every major racial and ethnic group. *Pew Research Center*, https://www.pewresearch.org/short-reads/2024/11/18/us-women-are-

outpacing-men-in-college-completion-including-in-every-major-racial-and-ethnic-group/

Imhoff, R., & Lamberty, P. (2018). How paranoid are conspiracy believers? Toward a more fine-grained understanding of the connect and disconnect between paranoia and belief in conspiracy theories. *European Journal of Social Psychology, 48*(7), 909-926.

Keeley, B. L. (1999). Of conspiracy theories. *The Journal of Philosophy, 96*(3), 109-126. doi:10.2307/2564659

Klein, D. B. (2011, December). I was wrong, and so are you. *The Atlantic*. https://www.theatlantic.com/magazine/archive/2011/12/i-was-wrong-and-so-are-you/308713/

Klein, D. B., & Buturovic, Z. (2011). Economic enlightenment revisited: New results again find little relationship between education and economic enlightenment but vitiate prior evidence of the left being worse. *Econ Journal Watch, 8*(2), 157-173.

Kolesnikova, N., & Liu, Y. (2011, October). Gender wage gap may be much smaller than most think. *The Regional Economist*. Federal Reserve Bank of St. Louis. https://www.stlouisfed.org/Publications/Regional-Economist/October-2011/Gender-Wage-Gap-May-Be-Much-Smaller-Than-Most-Think?hc_location=ufi#endnotes

Kuklinski, J. H., & Quirk, P. J. (2001). Conceptual foundations of citizen Competence. *Political Behavior, 23*(3), 285-311. doi:10.1023/A:1015063108221

Lobato, E., Mendoza, J., Sims, V., & Chin, M. (2014). Examining the relationship between conspiracy theories, paranormal beliefs, and pseudoscience acceptance among a university population. *Applied Cognitive Psychology*, *28*(5), 617-625. doi:10.1002/acp.3042

Lupia, A. (2016). *Uninformed: Why people know so little about politics and what we can do about it*. New York: Oxford University Press.

McCaffree, K., & Saide, A. (2022). *Who Endorses Race and Gender Conspiracies?* Skeptic Research Center, PCIS-002.

Newton, C., Feeney, J., & Pennycook, G. (2023). On the disposition to think analytically: Four distinct intuitive-analytic thinking styles. *Personality and Social Psychology Bulletin*, 01461672231154886. doi:10.1177/01461672231154886

Oaksford, M., & Chater, N. (2012). Dual processes, probabilities, and cognitive

architecture. *Mind & Society, 11*, 15-26.

Oliver, J. E., & Wood, T. J. (2014). Conspiracy theories and the paranoid style(s) of mass opinion. *American Journal of Political Science, 58*, 952-966.

O'Neill, J., & O'Neill, D. (2012). *The declining importance of race and gender in the labor market*. Washington, DC: AEI Press.

Pennycook, G., Cheyne, J. A., Koehler, D. J., & Fugelsang, J. A. (2020). On the belief that beliefs should change according to evidence: Implications for conspiratorial, moral, paranormal, political, religious, and science beliefs. *Judgement and Decision Making, 15*(4), 476-498. doi:10.3758/s13428-015-0576-1

Phelan, J. (2018, December 10). Harvard study: "Gender wage gap" explained entirely by work choices of men and women. *Foundation for Economic Education*. https://fee.org/articles/harvard-study-gender-pay-gap-explained-entirely-by-work-choices-of-men-and-women/

Piazza, J., & Landy, J. (2013). "Lean not on your own understanding": Belief that morality is founded on divine authority and non-utilitarian moral thinking. *Judgment and Decision Making, 8*, 639-661.

Pigden, C. (1995). Popper revisited, or what is wrong with conspiracy theories? *Philosophy of the Social Sciences, 25*(1), 3-34. doi:10.1177/004839319502500101

Pigden, C. (2024). How to make conspiracy theory research intellectually respectable (and what it might be like if it were). *Inquiry*, 1-25. doi:10.1080/0020174X.2024.2375780

Shermer, M. (2022). *Conspiracy*. Baltimore: Johns Hopkins University Press.

Srol, J. (2022). Individual differences in epistemically suspect beliefs: the role of analytic thinking and susceptibility to cognitive biases. *Thinking & Reasoning, 28*(1), 125-162. doi:10.1080/13546783.2021.1938220

Ståhl, T., & van Prooijen, J.-W. (2018). Epistemic rationality: Skepticism toward unfounded beliefs requires sufficient cognitive ability and motivation to be rational. *Personality and Individual Differences, 122*, 155-163.

Stanovich, K. E. (2004). *The robot's rebellion: Finding meaning in the age of Darwin*. Chicago: University of Chicago Press.

Stanovich, K. E. (2011). *Rationality and the reflective mind*. New York: Oxford University Press.

Stanovich, K. E., & Toplak, M. E. (2012). Defining features versus incidental correlates of Type 1 and Type 2 processing. *Mind & Society, 11*, 3-13.

Stanovich, K. E., & Toplak, M. E. (2019). The need for intellectual diversity in psychological science: Our own studies of actively open-minded thinking as a case study. *Cognition, 187*, 156-166. doi:https://doi.org/10.1016/j.cognition.2019.03.006

Stanovich, K. E., & Toplak, M. E. (2023). Actively open-minded thinking and its measurement. *Journal of Intelligence, 11*(2). doi:10.3390/jintelligence11020027

Stanovich, K. E., & and Toplak, M. E. (2025a). Conspiracy beliefs in the context of a comprehensive rationality assessment. *Thinking & Reasoning, 31*(1), 7-29. doi:10.1080/13546783.2024.2368026

Stanovich, K. E., & Toplak, M. E. (2025b). Reconceptualizing the rationality of conspiratorial thinking. In J. Forgas (Ed.), *The psychology of false belief* (pp. 267-287). New York: Routledge.

Stanovich, K. E., & West, R. F. (1997). Reasoning independently of prior belief and individual differences in actively open-minded thinking. *Journal of Educational Psychology, 89*, 342-357.

Stanovich, K. E., West, R. F., & Toplak, M. E. (2016). *The rationality quotient: Toward a test of rational thinking*. Cambridge, MA: MIT Press.

Steiger, J. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin, 87*, 245-261.

Uscinski, J. E. (2020). *Conspiracy theories: A primer*. Lanham, MD: Rowman & Littlefield.

Yılmaz, O., & Sarıbay, S. (2017). The relationship between cognitive style and political orientation depends on the measures used. *Judgment & Decision Making, 12*, 140-147.

Table 1. Correlations Between AOT and the Ideological Variables

	1	2	3	4	5	6
1. AOT						
2. Ideology - Economics	.294					
3. Ideology - Social	.372	.750				
4. Ideology - Composite	.356	.936	.936			
5. Party	.269	.703	.733	.768		
6. RWA	-.474	-.494	-.618	-.594	-.478	
7. LWA	-.195	.304	.288	.316	.296	-.074

Note: all correlations larger than or equal to .076 in absolute value are significant at the .05 level, and correlations larger than or equal to .126 in absolute value are significant at the .001 level

AOT = Actively Open-Minded Thinking scale; RWA = Right-Wing Authoritarianism; LWA = Left-Wing Authoritarianism

Table 2. How the Ideology Composite and AOT Correlate
with the Other Variables in the Study

	Ideology	AOT
Paranormal Beliefs	-.076	-.381
Narcissism	-.048	-.344
Machiavellianism	.097	-.094
Psychopathy	.025	-.192
Dark Triad Composite	.032	-.274
Paranoia	-.053	-.336
AEA	.018	.033
HCFS	-.208	-.261
Government Credulity	.146	-.192
Religiosity Composite	-.347	-.329

Note: all correlations larger than .076 in absolute value are
significant at the .05 level, and correlations larger than .126 in
absolute value are significant at the .001 level

AOT = Actively Open-Minded Thinking scale; AEA = Anti-
Establishment Attitudes scale; HCFS = Hidden Causal Forces
scale

Table 3. Predictors of the Ability to Distinguish True from False Conspiracies

	d' Discrimination Index	False Conspiracies	True Conspiracies
AOT	.362	-.380	.041
Ideology - Composite	.211	-.251	-.051
Paranormal Beliefs	-.338	.558	.223
Narcissism	-.154	.207	.051
Machiavellianism	.081	.089	.224
Psychopathy	.120	.022	.178
Dark Triad Composite	.020	.138	.197
Paranoia	-.174	.277	.137
AEA	-.035	.478	.493
HCFS	-.310	.768	.485
Government Credulity	-.178	-.123	-.352
Religiosity Composite	-.321	.304	-.045

Note: all correlations larger than .076 in absolute value are significant at the .05 level, and correlations larger than .126 in absolute value are significant at the .001 level

AOT = Actively Open-Minded Thinking scale; AEA = Anti-Establishment Attitudes scale; HCFS = Hidden Causal Forces scale

Table 4. Predictors of Anti-Democratic Attitudes
and the Tendency to Endorse Political Violence

	Anti-Democratic Attitudes	Political Violence
Paranormal Beliefs	.196	.126
Narcissism	.184	.312
Machiavellianism	.066	.356
Psychopathy	.030	.348
Dark Triad Composite	.121	.441
Paranoia	.159	.346
AEA	.017	.117
HCFS	.021	.111
Government Credulity	.463	.151
Religiosity Composite	-.045	-.068
Ideology	.320	.186
AOT	-.147	-.199

Note: all correlations larger than .076 in absolute value are significant at the .05 level, and correlations larger than .126 in absolute value are significant at the .001 level

AEA = Anti-Establishment Attitudes scale; HCFS = Hidden Causal Forces scale; AOT = Actively Open-Minded Thinking scale

Table 5. How the Ideology Composite
and AOT Correlate with Various Contested Beliefs

	Ideology	AOT
The attempted assassination of Donald Trump in Pennsylvania in July, 2024 was a fake assassination staged by the Trump campaign to generate sympathy for him	.343	-.152
The way the founders of the United States set things up ensures that, even today, only whites can be truly free and successful	.350	-.065
The way the founders of the United States set things up ensures that, even today, only men can be truly free and successful	.387	-.035
Prestigious universities conspire to keep out minority students.	.235	-.213
Women are discriminated against in getting a university degree.	.488	.061
Men secretly agree among themselves to keep women down.	.230	-.189
Whites and Asian-Americans rig the economy so that they come out on top.	.141	-.226
American institutions are designed to pay women substantially less than men for doing exactly the same work.	.393	.011
Most living white Americans are descended from people who owned American slaves.	.230	-.176

Note: all correlations larger than .076 in absolute value are significant at the .05 level, and correlations larger than .126 in absolute value are significant at the .001 level