Structuring controversy: The dialectic of disagreement

SHARON BAILIN

Faculty of Education, Simon Fraser University, Vancouver Canada
bailin@sfu.ca

MARK BATTERSBY

Department of Philosophy, Capilano University, Vancouver Canada
mbattersby@criticalinquirygroup.com

There is considerable evidence that the consideration of alternative views and opposing arguments is crucial for coming to reasoned judgments. Yet disagreement and controversy may result in animosity, adversariality, and polarization. This paper addresses the issue of how to incorporate disagreement into critical thinking instruction in a way that results in productive interaction and robust outcomes.

KEYWORDS: adversariality, alternative views, controversy, dialectical inquiry, polarization, reasoned judgment

1. INTRODUCTION

There is considerable evidence that the consideration of alternative views and opposing arguments is crucial for coming to reasoned judgments. Yet disagreement and controversy may result in animosity, adversariality, and polarization. This paper addresses the issue of how to incorporate disagreement into critical thinking instruction in a way that results in productive interaction and robust outcomes.

2. EPISTEMIC PROBLEMS OF ONE-SIDEDNESS

A significant obstacle to arriving at reasoned judgments is posed by the failure to seriously consider views and arguments which conflict with the position which one holds. One major cause is confirmation bias, the common tendency to primarily seek evidence in support of one's existing views. This problem is exacerbated by the one-sideness of the claims and arguments to which people are often exposed. The effects of search engines whose personalization algorithms direct people to views

which are similar to their own (Pariser, 2011), the tendency of social media users to follow those who hold similar views (Halberstam & Knight, 2014), and the increasing geographic homogeneity of political beliefs (Aisch, 2018) all works against an exposure to alternative views and opposing arguments.

Such limited exposure to alternative views and opposing arguments has epistemic consequences. A number of authors have shown how significant errors of reasoning can be attributed to a lack of understanding of other positions and the failure to pursue alternative lines of reasoning (e.g., Finocchiaro's historical study of scientific reasoning (1994); Perkins's experimental investigations (1989; Perkins et al., 1983).

There is considerable current research in cognitive psychology which supports these conclusions. This research has demonstrated the ubiquity of myside bias, involving a failure to consider alternatives and to fairly and adequately evaluate arguments with which one disagrees (Perkins, 1989; Perkins & Tishman, 2001). It appears that people are generally much better at evaluating the arguments of others than they are at evaluating their own reasoning. They tend, for example, to have a limited ability to generate counter-arguments and counter-examples to views they hold (Mercier, 2016; Mercier & Sperber, 2017).

Such a consideration of alternatives is crucial for coming to a reasoned judgment because fully evaluating a view is a comparative enterprise requiring the weighing of evidence and arguments for and against the various alternative views (Kuhn, 1991; Bailin & Battersby, 2016, 2018b). Evaluation, as Kuhn argues, is meaningful only in a framework of comparison (Kuhn, 1991, pp. 266-267). In this context, the generation of counter-examples and counter-arguments plays a crucial role in the evaluating of one's own views in comparison with alternative views (Kuhn, 1991). As Kuhn puts it: "Paradoxically, to know that a theory is correct entails the ability to envision and address claims that it may not be" (p. 171).

3. EPISTEMIC BENEFITS OF CONTROVERSY

There are strategies that have shown some success in countering myside bias involving explicitly encouraging individuals to take others' perspectives (Galinsky & Ku, 2004) and to consider alternatives and counterarguments (Anderson, 1982; Hirt & Markman, 1995; Lord, Lepper, & Preston, 1984).

Another approach which can be effective is the actual exposure to conflicting views that can be facilitated in the context of deliberation within a group. There is a considerable body of research indicating that group deliberation can be superior to individual reasoning in many contexts, including political and economic forecasting (Mellers et al.,

2014), jury deliberations (Ellsworth, 1989), political deliberations (Fishkin, 2009; Mercier & Landmore, 2012) and scientific investigations (Dunbar, 1997).

In all these cases, the primary factor contributing to the effectiveness of group reasoning appears to be the confrontation of conflicting views. The existence of disagreement can counteract confirmation bias (Druckman, 2004; Schulz-Hardt et al., 2000) and can help people to see both sides of an issue (Kuhn & Crowell, 2011), acknowledge counter-arguments (Mercier & Sperber, 2017, p. 298; Kuhn, Shaw, & Felton, 1997), and make better judgments and decisions (Mercier & Sperber, 2017, p. 298).

4. RISKS OF CONTROVERSY

4.1 Problems of adversariality

Although engaging in controversy has important epistemic benefits, it also presents risks. One of these is adversariality. In one sense, controversy is, by its nature, adversarial in that it involves a confrontation of opposing views (Govier, 1999). And we are in agreement with Govier that the existence of controversy, in this sense, is a healthy thing. Getting the strongest arguments on various sides of an issue on the table for consideration is crucial for the comparative evaluation of arguments about controversial issues.

Problems arise when the confrontation between views is seen as a confrontation between arguers. According to Cohen, the dominant model of argumentation (DAM) frames argumentation as essentially an adversarial enterprise in which arguers are opponents or enemies in a battle to win (Cohen, 2015). The interlocutors are seen in roles of opponent and proponent with the goal of prevailing in the argument. Aikin (in a 2011 paper) supports this oppositional framing, maintaining that we argue with others because we believe that our views are correct and theirs are not and that those who disagree with our views are wrong and need correction (Aikin, 2011). Similarly, Govier (1999) states:

> Insofar as we are engaged in a controversy, we will be arguing with others who disagree with us and are, in that sense at least, our opponents or antagonists (p. 247).

Such an oppositional framing can be problematic in terms of the modes of discourse it encourages. Numerous theorists have criticized the dominance of battle metaphors in argumentation and the type of aggressive discourse which it can engender (Lakoff & Johnson, 1980; Moulton, 1989; Ayim, 1991; Cohen, 1995; Govier, 1999; Rooney, 2010).

These modes of discourse can interfere with reasonable and productive interactions and with rational exchange (Hundleby, 2013, p. 240).

It has been argued, however that adversarial argumentation need not result in aggressive modes of interaction. Govier (1999) suggests that argument is not necessarily confrontational and that adversariality can be kept to a logical and polite minimum, what she calls minimal adversariality.

The proposal for minimal adversariality, although it does address the issue of aggressive language and modes of interacting, is nonetheless problematic in accepting the framing of the enterprise in terms of opponents and winning. Govier, for example, states that in argumentation, "people occupy roles which set them against each other, as adversaries or opponents" (p. 242).

This slide from "arguing *for* claims" to "arguing *against* people who disagree with those claims" is problematic (as Govier herself acknowledges places).[1] Moreover, viewing the person holding the opposing position as one's opponent introduces an unnecessary and unhelpful element of adversariality (Rooney, 2010). As Rooney states:

> [W]hy are you my "opponent" if you are providing me with further or alternative considerations in regard to X . . . whether I end up agreeing with X or not-X? (p. 221)

Govier herself, in fact, recognizes the difficulty inherent in this oppositional terminology:

> Given all the positive aspects of controversy, there is an important sense in which such people are helping us by disagreeing with us. Thus we might wish to regard them as partners, not opponents (p. 254).

A related issue has to do with the effect of this contest metaphor on the goal of epistemic improvement. Some theorists (e.g., Aikin, 2011) argue that adversariality, with its accompanying desire to win, contribute to epistemic goals:

> it is in the enacting of the debates, the attempts by each side's proponents to make the best case, rebut the opponent's counter-arguments, and lay out the best criticisms of the alternatives that we gain an understanding of an issue (Aikin 2011, p. 260).

---

[1] "We can argue *for* a claim without arguing *against* a person – even in contexts where we are addressing our arguments to other persons with whom we deeply disagree" (Govier, p. 64).

The opposite result is often the case, however. The imperative to win that is inherent in adversarial argumentation may well eclipse the goal of coming to a reasoned judgment, undermining co-operation, open-mindedness, and a willingness to concede to the strongest reasons.

Such counter-productive tendencies may be tamed through adherence to appropriate dialectical norms (e.g., pragma-dialectical rules) (Aikin 2011) which ensure, among other things, that one concedes to the most defensible position. Such rules require that claims be put to the test of reason and that those which are to be accepted are those that have the strongest warrant. In other words, their justification lies in the epistemic goals of argumentation. If one's goal were simply to win an argument, then one would have no reason to concede to a more defensible position. Dialectical rules are based on an implicit recognition of the priority of the epistemic goal of reaching better justified positions over the goal of winning.

The framing of the argumentative enterprise in terms of winning and losing is, in fact, an inaccurate and misleading description, as Rooney (2010) points out. If our interlocutor offers a better argument for their position than we offer for ours, we don't lose. We actually gain. We are, epistemically speaking, better for it (pp. 121-122).

Accepting the force of this criticism of an oppositional framing, Aikin later offers a modification of Govier's minimal adversariality, proposing what he calls dialectically minimal adversariality:

> The only adversariality in this model is the matter of weighing the force of the better reasons, and so this is minimal and only dialectically adversarial. As a consequence, the force of this notion of dialectical adversariality is in the reasoned weighing of evidential considerations for and against a view (2017, p. 16).

Adversariality in this sense of the confrontation of opposing views is precisely what we are advocating. We acknowledge, with Aikin, that there are various dialectical tasks or "moves of critical probing" that must be performed and that some of them are oppositional from a dialectical perspective. In a similar vein, Stevens and Cohen (2018) argue that argumentative contexts vary and that one might choose a more adversarial role in some contexts. Roles are, however, fluid and often overlap in practice, as Cohen himself argues (Cohen, 2015). These dialectical tasks may be (and often are) performed by, shared among, and even switched between various numbers or combinations of individuals depending on the context. What matters is that the various tasks be performed. Moreover, the oppositionality entailed by these

moves is ultimately "in the service of a broader *cooperative* goal of dialectical testing of reasons and acceptability" (Aikin, 2017, p. 16). The overarching goal is epistemic betterment (Stevens & Cohen, 2019). And from this perspective argumentation needs to be seen as a collaborative endeavour.

4.2 Problems of polarization

Another potential risk of controversy is polarization. Although the exposure to conflicting views can enhance the making of reasoned judgments, it does not always reap such epistemic benefits.

One obstacle is belief tenacity. Numerous studies have shown that beliefs, once formed, can survive strong counter-arguments and discrediting evidence (Jennings, Lepper, & Ross, 1981; Anderson, Lepper, & Ross, 1980, Lord, Ross, & Lepper, 1979). Moreover, the process of defending one's position against counter-arguments and counter-evidence often creates a backfire effect, with individuals becoming even more entrenched in their original positions (Sloman & Fernbach, 2017; Kahan, 2013; Bail et al., 2018).

One explanation for these tendencies is in terms of defensive biases. People tend to identify with their beliefs and so are motivated to protect their beliefs as a way of protecting their feelings of adequacy and self-worth (Cohen et al., 2007; Sherman & Cohen, 2002).

Another likely factor is cultural cognition, which involves individuals holding onto specific beliefs as a way of expressing their group identity and evaluating information in a selective pattern that reinforces their group's worldview (Kahan, 2013; Kahan, Jenkins-Smith & Braman, 2011).

The research cited earlier suggests that group deliberation is a way to overcome some of these obstacles. Yet these epistemological benefits only accrue in groups in which genuine arguments for alternative views are presented (Lunenburg, 2012; Schultz-Hardt et al., 2002; Sunstein, 2006) and in which group members feel free to express their views. Discussion groups in which critique, argumentation, and the consideration of alternatives is absent and in which members feel pressure to conform to the majority view can, in fact, have a negative impact on reasoning, amplifying errors, reinforcing existing beliefs, increasing commitment to poor decisions (Janis, 1982; Schultz-Hardt et al. 2000, 2006; Sunstein & Hastie, 2015) and sometimes even resulting in more polarized views (Sunstein 1999, p. 1).

5. DIALECTICAL INQUIRY

Our objective is to find a way to incorporate disagreement into critical thinking instruction in a way that mitigates these problems and enhances epistemic benefits. The research and arguments rehearsed above suggests that such instruction should instantiate the following features:
1. It should focus explicitly on a comparative evaluation of conflicting views.
2. It should have group deliberation as a central focus.
3. It should be framed with an inquiry orientation.

5.1 The nature of dialectical inquiry

The approach to critical thinking instruction that we propose to meet this challenge is based on dialectical inquiry (Bailin & Battersby, 2016, 2018b). In dialectical inquiry, the goal is to come to a reasoned judgment on a controversial issue and this is viewed as an essentially dialectical and collaborative process. Students work in groups to comparatively evaluate arguments on all sides of an issue rather than simply offering and defending their own arguments. Thus the exploration of conflicting views is at the centre of the inquiry process, but the process of reaching a reasoned judgment is a collaborative rather than adversarial endeavour. The focus is on the confrontation of conflicting positions without the adversariality implicit in oppositional argumentation, and the collaborative, community orientation can mitigate the type of polarization which often accompanies controversy.

5.2 Aspects of dialectical inquiry

There are particular aspects of dialectical inquiry which instantiate the desired elements.

5.2.1 Comparative evaluation of conflicting views

Aspects of the structure of the inquiry process ensure an exposure to conflicting views. These include the requirement that students research the actual arguments that have been presented on various of issues. A useful heuristic in this regard is a dialectical argument table which represents the debate on the issue, including the arguments pro and con as well as objections to the arguments and responses to the objections. Reaching a reasoned judgment takes place through a comparative evaluation of the relative strengths of the various arguments in the overall case.

5.2.2 Group deliberation

The advantages of group deliberation are facilitated in a number of ways. Students frequently engage in group interaction, discussing, questioning, challenging, and critiquing. They engage in collaborative inquiries, jointly researching, evaluating, and coming to a joint judgment. They also engage in individual inquiries in which they conduct the inquiry in stages, working in groups to get feedback and critique from peers at each stage. Strategies for further promoting the inclusion of conflicting views within the groups include creating heterogeneous groups, devil's advocacy (Schulz-Hardt, Jochims & Frey, 2002), and structured controversy (where students alternatively defend different sides of an issue and then collectively come to a reasoned judgment) (Johnson & Johnson, 1988, 2009). These strategies can help to mitigate the pitfalls of adversariality in group argumentation while ensuring that alternative views are given a full hearing.

The epistemic ends of inquiry are also fostered by the creation of a community of inquiry. This is a community which instantiates the norms of rational inquiry, promoting open-minded and fair- minded exchanges, rigorous but respectful critique, and changing one's mind when justified by the evidence and arguments. It is also a community committed to respectful treatment, meaningful participation, and productive interaction (Bailin & Battersby, 2016b). Such a community can mitigate defensive biases in that value is placed not on supporting particular views but rather on being reasonable. It can also address the challenges posed by cultural cognition by creating a community of affiliation centred on rational inquiry as an alternative to or counter- balance to one's cultural community.

5.2.3 Inquiry orientation

An important aspect of the approach involves the framing of argumentation in terms of inquiry rather than persuasion. Students need to understand that the confrontation is really between views and not between people. The epistemic goals of argumentation and the essentially collaborative nature of the enterprise are emphasized in dialectical inquiry.

6. WILL IT MAKE A DIFFERENCE?

One objection that has been raised to dialectical inquiry is that it is not really a way of dealing with controversy. To quote a reviewer, "Instead of engaging IN a controversy, students are encouraged to think ABOUT a controversy. These are different kinds of activities and it is hard to see

how - at least in the wild, i.e., outside of the classroom - people could be motivated to shift from the first kind of activity to the second."

We would, however, dispute the claim that these are fundamentally different kinds of activities. Even when individuals are engaging in argumentation over a controversial issue with the goal of persuading others of the soundness of their position, they are bound by normative rules which require conceding to the most defensible position. Thus, whatever the initial intent of the argument, the arguers are essentially testing claims in the interest of arriving at the best justified position. They are, in other words, inquiring. This indicates that the dichotomized framing of the activities in terms of engaging in a controversy versus thinking about a controversy is problematic. The criticism seems to assume that engaging in a controversy involves adversarial argumentation aimed at persuasion and that the confrontation of opposing views through inquiry is not really engaging in the controversy. But dialectical inquiry is not just thinking about a controversy. It is trying to come to a reasoned judgment about the controversial issue and so is also engagement.

The dialectical inquiry approach aims at helping students learn to treat controversial issues with an inquiry orientation. They learn to reframe the process of argumentation, acquiring the habit of considering both/many sides of an issue and treating the dialogical interaction as one in which they need to be willing to be open to other views and to change their mind when warranted. We recognize that people, including our students, engage in argumentation in different contexts and for various purposes, and that sometimes the immediate purpose is to persuade. But through engaging in dialectical inquiry, they learn the need to inquire into an issue before attempting to make a case. Making a reasonable case can be seen as presenting the results of an inquiry in such a manner that the interlocutors will also come to see that the judgment is reasonable. But whatever their more proximal purposes, the aim is for students to keep in mind the overriding epistemic goals. The intention is that students learn to frame the activity through an epistemological orientation.

An important aspect of the dialectical inquiry approach is the development of a spirit of inquiry. The approach not only aims at equipping students to make reasoned judgments via critical inquiry but also puts considerable emphasis on fostering the habits of mind of the critical inquirer. This means fostering in students the disposition to believe and act on the basis of reason and the motivation to inquire in the face of disagreement.

Confronting controversy is not limited to instances of direct argumentation with others. We are frequently confronted with conflicting views and arguments and need to think them through on our own. Given that our interest is in education, our aim is not only to

enhance the ability and disposition of people to make reasoned judgments when they argue with each other but also, importantly, to enhance the ability and disposition of individuals to make reasoned judgments when they think through controversial issues on their own. This includes anticipating counter-arguments, generating alternatives, and fairly evaluating all sides of an issue. These aims are addressed directly through aspects of the dialectical inquiry process (e.g., the requirement to research arguments on various sides, the pro con argument table) and also through the community of inquiry and group deliberation.

There is, in fact, considerable evidence that the epistemic benefits of group deliberation carry over to the individual context. Kuhn, for example, found that students who had engaged in argumentation with peers offered more complex arguments incorporating both sides of the issue when writing individual essays on a different topic than did students who had been reasoning on their own (Kuhn & Crowell, 2011). They also demonstrated an increased capacity to anticipate counter-arguments in contexts when an interlocutor was not present and with respect to topics beyond those discussed in the group (Mercier, 2017, p. 11). Through engaging in group argumentation, students interiorized the dynamics of argumentation and become better reasoners on their own (Mercier, 2017).

7. CONCLUSION

There is considerable evidence that the consideration of alternative views and opposing arguments is crucial for coming to reasoned judgments. Yet controversy often results in adversariality and polarization, which tend to have a negative effect on our epistemic goals. The approach to critical thinking instruction which we propose, dialectical inquiry, offers a way to incorporate the confrontation of conflicting views into critical thinking instruction in a way that minimizes adversariality and polarization. The goal is not to avoid controversy but rather to structure it to this end.

REFERENCES

Aikin, S. F. (2011). A defense of war and sports metaphors in argument. *Philosophy and Rhetoric,* 44(3), 250-272.
Aikin, S. F. (2017). Fallacy theory, the negativity problem, and minimal dialectical adversariality. *Cogency*, 9(1), 7–19.
Aisch, G. (2018). The divide between red and blue America grew even deeper in 2016. *The New York Times.* Retrieved from https://www.nytimes.com/interactive/2016/11/10/us/politics/red-blue-divide-grew-stronger-in-2016.html.

Anderson, C. A. (1982). Inoculation and counter-explanation: Debiasing techniques in the perseverance of social theories. *Social Cognition,* 1, 126–139.

Anderson, C. A., Leper, M. R., & Ross, L. (1980). Perseverance of social theories: The role of explanation in the persistence of discredited information. *Journal of Personality and Social Psychology,* 39, 1037-1049.

Ayim, M. (1991). Dominance and affiliation. *Informal Logic,* 13(2), 79-88.

Bail, C., Argyle, L., Brown, T., Bumpus, J., Chen, H., Hunzakeer, F., Lee, J., Mann, M., Merhout, F., & Volfovsky, A. (2018). Exposure to opposing views can increase political polarization: Evidence from a large-scale field experiment on social media. Retrieved from www.files.osf.io

Bailin, S., & Battersby, M. (2016). *Reason in the balance: An inquiry approach to critical thinking.* 2nd edition. Cambridge, Mass: Hackett.

Bailin, S., & Battersby, M. (2018a). DAMed if you do; DAMed if you don't: Cohen's 'Missed Opportunities.' In M. Battersby & S. Bailin, *Inquiry: A new paradigm for critical thinking.* Windsor, ON: Windsor Studies in Argumentation.

Bailin, S., & Battersby, M. (2018b). Inquiry: A dialectical approach to teaching critical thinking. In M. Battersby & S. Bailin, *Inquiry: A new paradigm for critical thinking.* Windsor, ON: Windsor Studies in Argumentation.

Cohen, D. H. (2015). Missed opportunities in argument evaluation. In B.J. Garssen, D. Godden, G. Mitchell, & A. F. Snoeck Henkemans, (Eds.), *Proceedings of ISSA 2014: Eighth Conference of the International Society for the Study of Argumentation* (pp. 257–265), Amsterdam: Sic Sat.Govier

Cohen, D.H. (1995). Argument as war … and war is hell: Philosophy, education, and metaphors for argumentation. *Informal Logic,* 17(2), 177-188.

Cohen, G. L., Bastardi, A., Sherman, D. K., McGoey, M., Hsu, L., & Ross, L. (2007). Bridging the partisan divide: Self-affirmation reduces ideological closed-mindedness and inflexibility in negotiation. *Journal of Personality and Social Psychology,* 93(3), 415-430.

Dunbar, K. (1997). How scientists think: On-line creativity and conceptual change in science. In T. B. Ward, S. M. Smith, J. Vaid, & D. Perkins (Eds.), *Creative thought: An investigation of conceptual structures and processes.* Washington, DC: American Psychological Association, 461-493.

Ellsworth, P. C. (1989). Are twelve heads better than one? *Law and Contemporary Problems,* 52(4), 205-224

Finocchiaro, M. (1994). Two empirical approaches to the study of reasoning. *Informal Logic* 16(1), 1-21.

Fishkin, J. S. (2009). *When the people speak: Deliberative democracy and public consultation.* Oxford: Oxford University Press.

Galinsky, A. D., & Ku, G. (2004). The effects of perspective-taking on prejudice: The moderating role of self-evaluation. *Personality and Social Psychology Bulletin*, 30, 594–604.

Govier, T. (1999). *The philosophy of argument*. Newport News, VA: Vale Press.

Halberstam, Y., & Knight, B. (2016). Homophily, group size, and the diffusion of political information in social networks: Evidence from Twitter. *Journal of Public Economics*, 143, 73-88.

Hirt, E., & Markman, K. (1995). Multiple explanation: A consider-an- alternative strategy for debiasing judgments. *Journal of Personality and Social Psychology, 69,* 1069–1086.

Hundleby, C. (2013). Aggression, politeness, and abstract adversaries. *Informal Logic* 33(2), 238–262.

Janis, I. L. (1982). *Groupthink* (2nd rev.). Boston, MA: Houghton Mifflin.

Jennings, D. L., Leper, M. R., & Ross, L. (1981). Persistence of impressions of personal persuasiveness: Perseverance of erroneous self-assessments outside the debriefing paradigm. *Personality and Social Psychology Bulletin, 7,* 257-263.

Johnson, D. W. & Johnson, R. T. (2009). Energizing learning: The instructional power of conflict. *Educational Researcher, 38*(1), 37–51.

Johnson, D. W. & Johnson, R. T. (1988). Critical thinking through structured controversy. *Educational Leadership,* 45(8), 58-64.

Kahan, D. M. (2013). Ideology, motivated reasoning, and cognitive reflection. *Judgment and Decision Making,* 8(4), 407-424.

Kahan, D. M., Jenkins-Smith, H., & Braman, D. (2011). Cultural cognition of scientific consensus. *Journal of Risk Research*, 14*(2),* 147-174.

Kuhn, D. (1991). *The skills of argument.* New York: Cambridge University Press.

Kuhn, D. & Crowell, A. (2011). Dialogic argumentation as a vehicle for developing young adolescents' thinking. *Psychological Science,* 22(4), 545-552

Kuhn, D., Shaw, V., & Felton, M. (1997). Effects of dyadic interaction on argumentative reasoning. *Cognition and Instruction*, 15, 287–315.

Lakoff, G., & Johnson, M. (1980). *Metaphors we live by.* Chicago: University of Chicago Press

Lord, C., Lepper, M., & Preston, E. (1984). Considering the opposite: A corrective strategy for social judgment. *Journal of Personality and Social Psychology, 47,* 1231–1243.

Lord, C. G., Ross, L., & Lepper, M.R. (1979). Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of Personality and Social Psychology*, 37(11), 2098-2109.

Lunenburg, F. (2012). Devil's advocacy and dialectical inquiry: Antidotes to groupthink. *International Journal of Scholarly Academic Intellectual Diversity*, 14(1), 1–9.

Mellers, B., Ungar, L., Baron, J., Ramos, J., Gurcay, B., Fincher, K., Scott, S. E., Moore, D., Atanasov, P., Swift, S. A., & Murray, T. (2014). Psychological strategies for winning a geopolitical forecasting tournament. *Psychological science*, 25(5), 1106-1115.

Mercier, H. (2016). The argumentative theory: Predictions and empirical evidence. *Trends in Cognitive Sciences*, 20(9), 689-700.

Mercier, H. & Landemore, H. (2012). Reasoning is for arguing: Understanding the successes and failures of deliberation. *Political Psychology*, 33(2), 243-258

Mercier, H. & Sperber, D. (2017). *The enigma of reason*. Cambridge, Mass: Harvard University Press.

Moulton, Janice. (1989). A paradigm of philosophy: The adversary method. In S. Harding & M.B. Hintikka (Eds.), *Discovering reality: Feminist perspectives on epistemology, metaphysics, methodology, and philosophy of science* (pp. 149-164), Dordrecht, Holland: D. Reidel.

Pariser, E. (2011). *The filter bubble: What the internet is hiding from you*. London: Penguin.

Perkins, D. N. (1989), Reasoning as it is and as it could be: An empirical perspective. In D. N. Topping, D. C. Crowell, & V. N. Kobayashi (Eds.), *Thinking across cultures: The third international conference on thinking.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Perkins, D. N., Allen, R., & Hafner, J. (1983). Difficulties in everyday reasoning. In W. Maxwell (Ed.), *Thinking: The expanding frontier.* Philadelphia: The Franklin Institute Press.

Perkins, D. N., & Tishman, S. (2001). Dispositional aspects of intelligence. In S. Messick & J. M. Collis (Eds.), *Intelligence and personality: Bridging the gap in theory and measure- ment* (pp. 233-257). Mahwah, NJ: Lawrence erlbaum. Retrieved May 17, 2006, from http://learnweb.harvard.edu/alps/thinking/docs/Plymouth.pdf

Rooney, P. (2010). Philosophy, adversarial argumentation, and embattled reason. *Informal Logic* 30(3), 203-234.

Schulz-Hardt, S., Frey, D., Luthgens, C., & Moscovici, S. (2000). Biased information search in group decision making. *Journal of Personality and Social Psychology,* 78, 655-669.

Schulz-Hardt, S., Jochims, M., & Frey, D. (2002). Productive conflict in group decision making: Genuine and contrived dissent as strategies to counteract biased information seeking. *Organizational Behavior and Human Decision Processes,* 88, 563 – 586.

Sherman, D.K., & Cohen, G.L. (2002). Accepting threatening information: Self-affirmation and the reduction of defensive biases. *Current Directions in Psychological Science*, 11(4), 119-123.

Sloman, S., & Fernbach, P. (2017). *The knowledge illusion: Why we never think alone*. Penguin.

Stevens, K., & Cohen, D. (2019). The attraction of the ideal has no traction on the real: On adversariality and roles in argument. *Argumentation and Advocacy,* 55(1), 1-23.

Sunstein, C. R. (1999). The law of group polarization. *University of Chicago Law School, Coase-Sandor Working Paper Series in Law and Economics*.

Sunstein, C. R. (2006). *Infotopia: How many minds produce knowledge*. Oxford: Oxford University Press.

Sunstein, C.R., & Hastie, R. (2015). Garbage in, garbage out? Some micro sources of macro errors**.** *Journal of Institutional Economics*, 11(3), 561–583.