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Broadening “*in situ*” for improving argument evaluation?

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Abstract: *The psychology of argumentation (PSA), has added new insight into argumentation theory and informal logic, fields that so far have been strongly influenced by the philosophy of argumentation (PHA). One assumption with regard to the PSA is that reasoning is argumentative and constructed to persuade. Thus, the successful outcome of reasoning is the ability to persuade for action to adapt to specific situations. Whereas biased beliefs – generated by mechanisms such as confirmation bias and motivated reasoning – might sway production and evaluation of arguments significantly. Arguers do not primarily activate reasoning for logical purposes; they do so rather to justify particular beliefs as well as actions. In contrast, from a critical PHA-perspective, reasoning is analyzed and corrected as fallacious and slippery communication in line with a normatively demanding perspective of the PHA. Insight from the PHA on smooth, manipulative, and outsmarting dialogue shifts might be decisive for understanding the outcome of a debate or group work. Another way in which the PSA and the PHA can complement each other concerns the fact that the PSA gathers data in the lab (cf. *in vitro*/"in glass", referring to a lab) while the PHA does so by field studies (cf. *in vivo*). In this paper I will indicate how knowledge from the PSA and the PHA might be complementary approaches.*

Keywords: Argument-evaluation, biased beliefs, confirmation bias, critical thinking, dialogue shifts, fallacious arguments, *in situ*, informal logic, philosophy of argumentation, psychology of argumentation, reasoning

1. Introduction

Since the psychology of argumentation (PSA) is a new field of study, it is not unexpected that philosophy or argumentation (PHA) journals such as e.g. *Argumentation* has sparse coverage of the PSA. A reason for it might be that there is little common ground between the PHA and the PSA because of their different subject matters. In *Argumentation* a reader might find versions of the argumentative function of reasoning (cf. e.g., Mercier, 2011, 2012; Trouche, Shao & Mercier, 2019),¹ inasmuch as hardly any about complementary and crossdisciplinary perspective on the PHA and the PSA. In my essay I introduce psychologists efforts to engage argumentation (PSA) and put such efforts in dialogue with more traditional approaches (PHA). This is no easy task, but I think it is well worth pursuing.

Below I will regard the opportunities for a broader perspective than either the PSA or the PHA. A challenge is that my presentation of a crossdisciplinary perspective on argument evaluation might be more general than readers are used to. Though, an overview might be of potential interest for further research.

My attempt for considering a broader perspective is reason for not including argument production in addition to argument evaluation. However, both the PSA and the PHA have generated interest in argument evaluation. Another reason for looking at argument evaluation rather than argument production is that H. Mercier and D. Sperber in response (2011b) to their

¹ It is interesting that Mercier's PSA argumentation seems varying from prudent and agreeable in a PHA journal as *Argumentation*, to antagonistic in e.g., *Educational Psychologist* (2017). In the latter journal he claims that teaching fallacies is an old tradition still popular in argumentation and critical thinking education even though nothing comes out of it.

target article (2011a) claim that the misunderstanding they are most eager to correct is the view that reasoning has rhetorical goals rather than both rhetorical and epistemic goals (Mercier & Sperber, 2011b, p. 95). The misunderstanding they think, is linked to the fact that they in the target article devoted more space to the production of arguments than to evaluation, and they add to this that their argumentative theory would not make sense if people were unable for epistemic evaluation of arguments (ibid. pp. 95, 96). As to “Division of cognitive labor” Greene & Hayes (2012) claim that a division between argument production (cf. rhetorical goal) and argument evaluation (epistemic goal) activates an antagonism in the cognitive division of labor (Greene et al., 2012, p.p. 190, 191). PHA has little interest in rhetoric as of need for normative concepts, and PHA low interest in argument production. Yet, when searching for complementary approaches, argument evaluation is underlying, and link between PHA and PSA in my paper.

Even if Artificial Intelligence (AI) seems to be of growing interest in the PSA, and AI over time has been of increasing interest in the PHA for modelling of informal logic simulated on computers to develop theories of argumentation – I will refrain from adding the field of AI to my multidisciplinary approach. Combining the broad fields of the PHA and the PSA is no easy task, and the picture I depict is not a complete one, neither of the PSA nor the PHA. It is a selection based on the history of the PHA and a brief history of the PSA. The advantage is that this allows me to approach argument evaluation more comprehensively than by focussing only on one of PSA or PHA.

With regard to the literature relevant for informal logic and the PHA, I will refer to articles in *The Handbook of Argumentation Theory* (F. H. van Eemeren, B. Garssen, E. C. W. Krabbe, F. Snoeck Henkemans, B. Verheij, J.M.H. Wagemans, Eds., 2014). Additionally, I will cite from classical works such as e.g. *Fundamentals in Argumentation Theory* (van Eemeren, F. H., Grootendorst, R., Snoeck Henkemans, F., Eds., 1996), and “classical” contributors like S.E. Toulmin, E. Schiappa and D. Walton. As for the PSA I mainly build on the target article by H. Mercier and D. Sperber (M&S) published in a special issue of *Behavioral and Brain Sciences* (BBS, 2011a), including peer comments and authors’ responses (2011b) and later articles by Mercier. In the target article, the authors show how the PSA stands on its own and how it optimistically presents claims for improved performance on reasoning in groups and the diminishing influence of biased beliefs.

As to the structure of the paper, I present the first part of the PHA and argument evaluation in section 2, *The PHA and argument evaluation*. In order to not circumvent argumentation that uses a sophisticated tactic, I will look shortly into a small part of Walton’s comprehensive works, such as evaluation of fallacious arguments presented by Walton (1992) – *The Place of Emotion in Argument* – based on Whately (1836), and quoted by Hamblin (1970) – including types of dialogues and dialogue shifts. In section 3, I introduce the PSA and argument evaluation with brief reference to among other things groups. In section 4 I focus on the PHA, the PSA and fallacious arguments. Finally, in section 5 I present conclusions and propose future research regarding argument evaluation.

2. The PHA and argument evaluation

As an introduction to the PHA, I will start with a broader picture. The PHA evolved within a context of formal logic and analytic philosophy and is naturally still influenced by its heritage. Informal logic is a composition of terms whose meaning has evolved over time², with the stable

² The PHA implies several stages of “informal logic”, from the late 70s – as a position different from formal logic – to the 80s when the movement was affiliated with critical thinking which remains applicable today. In the middle of the 80s a pragma dialectical approach was influential. Finally, in the 90s and to the present “informal logic” moved towards a multidisciplinary approach (cf. van Eemeren et al. 2014, 376-381).

understanding though that informal logic distances itself from formal logic. Nevertheless, like informal logic and critical thinking,³ the PHA seems to have a legitimizing connection to formal logic. When “logic” is defined *qua* philosophical study of the norms of reasoning, informal logic as a branch of logic takes the argumentation of nontechnical everyday discourse as its focus (van Eemeren et al., 1996, p. 164). The weakness of formal logic develops when e.g. two cases have the same form, and particular differences may be ignored as to evaluation of those cases (Schiappa & Nordin, 2014, p. 132). A good and a bad argument may have the same logical form and informal logic can handle cases that formal logic cannot, because e.g. argumentation schemes have broader consideration than logical forms. The more argumentation is employed in line with formal logic, the less likely it is that arguments will be evaluated *in situ*.

An interesting background for the PHA is elucidated by Toulmin with his comprehensive scholarly background, both in formal logic (he studied physics and mathematics at Cambridge) and informal logic which he worked his way into via his education in formal logic. As early as the 1950s, Toulmin denied the view that there are universal norms for evaluation of arguments and that the norms are served by formal logic. When delivering his PhD in ethics, he published *An Examination of the Place of Reason in Ethics* (1950). Already in that monograph, Toulmin argues that philosophers should stop analyzing ethical terms and rather examine the interplay between specific contexts and ethical judgment (van Eemeren et al., 2014, p. 204). He was a forerunner, and his book *The Uses of Argument* (1958) was unfortunately given little attention by philosophers while influential though in the theory field of US communication theory. However, through the years, it has become a standard work within informal logic.

Another background for the PHA that might not be well known is represented by E. Schiappa. He presents critical thinking as to definitions and evaluates definitions as arguments in his book *Defining Reality* (2003). According to him, defining is a version of argument production. A premise in his contribution is that definitions are human beliefs subject to revision, including definitions that are advanced by a legislator, a scientist, an attorney, a political activist, or a philosopher (op.cit., p.p. xii-xiii). Schiappa wants to replace the question “What is X?” with questions like “How ought we use the word X given our needs and interests?” “What is the purpose of defining X...in context C?” (op.cit., p. 168). Schiappa underlines that argument evaluation is dependent on definitions – as versions of argument production – context, needs and interest. He holds that when it is agreed that definitions as arguments are made and not found, then we have the responsibility of knowing that the process of definition simply and indefinitely is social (op.cit., p. 180)⁴.

Schiappa edited a book on argument evaluation in 1995 that did not get much attention (cf. *Case Studies in Argument Evaluation*)⁵. Numerous case studies for argument evaluation

³ In the 1980s the terms informal logic and *critical thinking* were noticed as coterminous movements. The *Association for Informal Logic and Critical Thinking* (AILACT) was founded to promote research and teaching within informal logic and critical thinking.

⁴ Walton (2001) takes this even further, according to Schiappa, when he argues that as long as definitions are lodged into place in government regulations and law, they serve particular interests and are even coercive (op.cit., p. 169). Hence, attempts to define reality should be treated as an argument open to critical questioning and counter-definitions. Here “argument” has a double meaning – both claim *qua product* and *qua process* (Schiappa et al., 2014, p. 9). Moreover, the process of argumentation evaluation is essential if you want to know what works and not only consider what is right and are satisfied with what occurs (op.cit., p. 151). To this I will add that Schiappa argued for keeping argument evaluation away from the term “*rhetoric*” to avoid altering critical expectations and maybe to avoid weakening his argument. He claimed that standards are lowered once a text is dubbed rhetoric. This is a subtle critique of “rhetoric” not new as a label that takes on the sinister complexion of “*propaganda*”, defined *qua* abuse of rhetoric. Several comprehensive attempts have been made to evaluate arguments as propaganda (cf. *The Institute for Propaganda Analysis*, IPA).

⁵ The subject of the edited work by Schiappa, seems to find interest within informal logic and critical thinking. On the one hand, the cases presented are oriented towards the Cold War, the former actor and President Ronald Reagan, the *Soviet Air Defense Forces’* destruction of *Korean Air Lines* Flight 007 over the Sakhalin Island, dissent in the Supreme Court concerning fetal

were presented, such as improving argumentative competence, teaching critical thinking, improving decision making, as well as means of testing argument theory (Schiappa, 1995, p. ix). However, Schiappa acknowledged that argument evaluation is by far the least popular *modus operandi* of the publishing scholar. Interest from teachers and scientific authors has, with few exceptions, been low.

When introducing PHA, I have presented some thoughts about that from Toulmin and Schiappa – well known contributors to the argumentation studies community – without being strict about what I take PHA to include and exclude. Further, I will look briefly into Walton

As to PHA, there is interest in avoiding bad argumentation, and knowledge of fallacies is one way to do this. Even though Walton's is one theory of the fallacies, I will in short refer to his theory of the fallacies and an issue and a topic associated with it, namely dialogue shifts.

The word *fallacy* is based on the Latin term *fallacia*, defined by Hamblin as incorrect arguments that appears to be correct (cf. Hamblin 1970). PHA has a critical tradition of working with fallacies of argumentation, categorizing several types of fallible arguments. By types of dialogues and dialogue shifts I refer to Walton as well as different versions of fallible arguments. Walton's fallacy theory includes tactics for blocking legitimate dialogue goals that make it hard to evaluate if appeal to emotion might be relevant, wherein an argument is logically weak and psychologically strong. A common feature of fallacious *arguments* is the speaker's ability to arouse and exploit the sentiments and prejudices of a target audience. The Latin term "*ad*" connected to the four main arguments⁶, and means directed towards a frame of mind, emotions or the audience.

Fallacious arguments are identified by the buttressing of bias, the aggressive intensification of appeals, the elimination of legitimate dialogue, and the entrapping of respondents in a deceptive judgment position. Even though there are several types of appeals (cf. appeal to the gallery, mob appeal, appeal to pity, appeal to threats etc.), I will in my paper focus on appeal to emotion as an appeal that theoretically might fit well into a psychological perspective on argumentation and deepen the understanding of it. When this does not seem to be the case, it is clarifying of how the perspective of psychology is applied.

Respondents may not know when communication includes premises that are psychologically relevant and not logically relevant, or to what extent premises twist or falsify the evidence. "Appeals to emotion in argumentation become fallacious not simply because they are invalid or erroneous inferences, but because they are used to capitalize on bias that shifts or twists the context of dialogue." (Walton, 1992, p. 264). Argumentation with a hidden agenda may also cover another function of argument by concealing a transition from one dialogue to another.

Tactical moves by the parties involved in a debate are decisive for how a debate develops and for how likely a dialogue shift might occur. Some types of dialogues seem to

versus women's rights, and alternative evaluations of the Attorney General's Commission on Pornography. A Reagan effect or Bush effect -- when a President leaves the Oval Office -- does not last long before sentiment from the period is diffused. People seem to forget about history and look forward to another president with a different vision (cf. President Trump will make America Great Again). Moreover, the audience is easily influenced by a president who can use all the means at his disposal for swaying the opinion, knowing that fake news is more enticing than argument evaluation. In IPA's propaganda studies, between World War I and II, researchers claimed that it is hard to learn from the past whereas proponents, respondents and messages change.

⁶ The (four) main *ad*-arguments become fallacious when premises are made psychologically relevant and the respondent may not know if the burden of proof is fulfilled by the premises to support the conclusion (D. N. Walton, 1992, pp. 1-4): (I) *Argumentum ad populum*, an appeal to popular sentiment, often referred to as an "appeal to the gallery" or "mob appeal", where ideas are presented in a strong, theatrical manner and target the most primitive instincts. (II) *Argumentum ad hominem*, use of personal attacks (a characteristic of propaganda) to effect character assassination; and *argumentum ad auctoritate*, proof derived from authority. (III) *Argumentum ad misericordiam*, an appeal to pity to support its conclusion. (IV) *Argumentum ad baculum* ("*baculum*" means ceptre and symbolized magisterial authority), an appeal to threats, fear and force implying legal compulsion.

serve so-called genuine debates and some heated debates such as eristic dialogue. When *in situ* is not controlled in a lab – and tactical moves including fancy footwork and cover (Walton, 1992, pp. 214-216) manipulate argumentation – it is a challenge to spot different kinds of dialogues⁷ and dialogue shifts. A proponent might under conditions of awareness (accurately calibrating the relation between truth and lies in the speech) and unawareness (gullible motives combined with lack of insight in the matter outlined by speech-writers) intentionally or unintentionally shift from one dialogue type to another and circumvent evidence and truth (cf. e.g. so-called Weapons of mass destruction (WMD) in Iraq).

An example of a cozy dialogue that easily might shift, is e.g. about where to go on holiday (example from Walton, 2007). The dialogue might start out with deliberative dialogue followed by persuasion dialogue, and maybe ends up with eristic dialogue, and a quarrel. If that is the case, the dialogue shift might take place as a function of the conflicting interests that come up during the conversation. This might occur unnoticed when respondents are unaware of the maneuver. Ad-arguments might be ignored as fallacies when one of the parties in a dialogue applies the advantage of playing by the effects of dialogue shifts as inference used in everyday discourse. So, when a proponent during an inquiry lacks burden of proof, that challenge might be dodged by a shift to eristic dialogue. Whereas a respondent is unaware of psychologically relevant effects of communication a proponent might reach far more on an effectiveness standard when employing ad-arguments and dialogue shifts,

In turning to PSA in the next paragraph, one might not expect so much interest in avoiding bad argumentation as interest in psychologically relevant effects of communication. Certain preferred versions of *in situ* might, in accordance with the PSA, circumvent confirmation bias, such as groups and debates, in which people are searching for the truth. While my introduction to the PHA followed the “emancipation” from formal logic, it is curious that the PSA has interest in “hot cognition”. M&S make only a couple of comments though in terms of appeals to emotion, and I will come back to them in section 3.1.

3. The PSA and argumentation evaluation

While PSA seems to have an unresolved relationship with formal logic, it is more than dependent on disciplines such as social psychology and psychology⁸. In a *dialogic context* based on everyday logic, one starts from the conclusion and tries to find premises that will convince one’s interlocutor. It is within this context M&S place the function of reasoning as argumentative, to devise and evaluate arguments *intended to persuade* (M&S, 2011a, pp. 57, 73).

Within the context of a debate one is presumed to start out from a conclusion and then search for the best suited premises to convince the other party (2011a, p. 73). The term “debate” implies everything from cogitation and deliberation to disputation, polemic, agitation and propaganda. Argumentation studies and informal logic “debate” does not have all these meanings. When following M&S’s generic sense of “debate”, some types of dialogue seem to serve «*genuine debate*» or «*good debate*» and some promote “*heated debate*”, such as eristic

⁷ Walton refers to six types of dialogues, including additional points that might be clarifying, such as 1: Initial Situation, 2: Participant’s Goal, and 3: Goal of Dialogue (cf. Walton, 2007, p. 60 Table 2.1). (I) *Deliberation* 1: dilemma, 2: coordinate goals and actions, 3: decide best course of action. (II) *Persuasion* (cf. the function of reasoning) 1: conflict of opinion, 2: persuade the other party, 3: resolve or clarify issue. (III) *Eristic* 1: personal conflict, 2: verbally attack an opponent, 3: reveal deeper basis of conflict. (IV) *Inquiry* 1: need to have proof, 2: find and verify evidence, 3: prove (disprove) evidence. (V) *Information-seeking* 1: need information, 2: acquire or give information, exchange information. (VI) *Negotiation* 1: conflict of interests, 2: get what you most want, 3: reasonable settlement that both can live with.

⁸ M&S are both philosophers and have the advantage of knowing PHA, simultaneously presenting multidisciplinary perspectives since one of the authors is professor of philosophy and cognitive science, and the other author is a postdoctoral fellow in a philosophy, political science and economics program.

dialogue⁹ – verbally attacking the opponent and revealing a deeper basis of conflict and thus creating an impression of chaos in order to play on bigotry.

Conditions for debate are crucial for argumentation and for group performance. If arguments are challenged in a “good debate”, the quality of the arguments is normally significantly improved. (M&S, 2011b, p. 62-63). As regards evaluation we are recommended not to look for flaws in our own arguments, but rather to allow others to find them and then adjust our arguments (op. cit. p. 73).

M&S appear to have an optimistic view on evaluation bias. When people are motivated they seem to use reasoning to evaluate arguments correctly (2011a, p. 61). On the other hand, M&S claim that even if people are doing their best, they still fail. M&S find that it is interesting when people through reasoning try as best as they can to find the logically correct answer, and they still fail even when the computation demanded by that task is not hard. M&S think this shows that reasoning is not geared toward pure, logical tasks. (2011b, p. 99). Hence, the authors refer to results saying that logical performance generally is fairly poor, e.g. a *modus tollens* conclusion is difficult to draw under individual and formal conditions (if p then q, not q, therefore not p). The more logical tasks are formalized and individualized, the harder it seems to solve a problem satisfactorily.

When other skills are studied in a lab – such as argumentation performance – they function satisfactorily, including their ability to attribute the burden of proof suitably. M&S further claim that people are good at evaluating arguments at the level of whole discussions (2011a, p. 62). This sounds favorable, even if it requires certain conditions. When reasoning is used in a propitious context – implying arguments among people who disagree but have a common interest in the truth – the confirmation bias is not active as to the evaluation of arguments, while still active in the production of arguments. Mercier, H., Boudry, M., Paglieri, F., & Trouche, E. (2017) have argued that reasoning should aim at thinking of arguments for the other side to overcome the “myside” bias (Mercier et al., 2017, p. 9). For some authors the “confirmation bias” refers to a biased search for weighing of evidence, while “myside bias” refers to biases in generating arguments (Wolfe, 2011, p.93). This distinction indicates that confirmation bias is solvable whilst linked to the argument evaluation, whereas the myside bias seems unsolvable when linked to argument production.

M&S propose an optimistic theory of confirmation bias founded on three predictions. The first is that it only should occur in argumentative situations. Secondly, it should occur only in production of arguments. Finally, the bias is in favor of confirming one’s own claims, which are not balanced by a corresponding bias in favor of disconfirming counterarguments (2011a, p. 64). The authors admit at the same time that in discussion, back-and-forth arguments, argument production and argument evaluation included, are mixed up and it is not manageable to keep them independent.

When people are asked to check out reasoning, they have a tendency to produce arguments depending on their own conclusions. However, when looking for arguments contrary to their own conclusions people may find many weaknesses, that might function as procedure for circumventing confirmation bias under certain conditions, such as in the evaluation of arguments when this social mechanism of confirmation bias seems inactive.

This is after all supposed to contribute to efficient division of cognitive labor, and reasoning biases are to become a positive force (M&S, 2011a, pp. 65, 73). Nonetheless, this

⁹ According to Walton, eristic dialogue is a special version of dialogue with three characteristics that link it closer to a monologue. Firstly, there is minimal interest in rules of critical discussion. All that matters is attack and defense. Secondly, there is no interest in achieving grasp or searching for the truth. Finally, there is no open mindedness on the part of any of those involved for being convinced by changing one’s commitments, even if persuasive arguments are presented by the other party (Walton. 1992, pp. 214-215).

seems to deviate from what the PHA researchers working with informal logic regard as the forceful effects of emotional appeals which characterize eristic dialogue, though emotions are neither necessary nor sufficient for eristic.

3.1 Groups

M&S likewise think optimistically about groups. In line with the PSA, groups can facilitate learning and comprehension of a broad variety of problems as an outcome of critical thinking in groups (cf. plausible, or most plausible arguments); still, M&S do not seem engaged in moral arguments or emotional appeals. So, in line with M&S, problems from abuse are not typical in an ordinary group with several members. Truth wins out as soon as one participant has understood a problem and is thereby able to convince the other about the solution (2011a, p. 62). M&S put focus on what they call genuine debates (2011b, p. 99), contrary to group polarization (2011a, p. 63). Debates are not examples of genuine debates. M&S claim that if people are skilled at producing and evaluating arguments in argumentative settings, a “*genuine debate*” should be a good argumentative context for reasoning performance, in spite of groupthink, face saving, strategic positioning, etc. (M&S, 2011b) hence state that certain circumstances can influence results in a dispute (2011b, p. 99). The authors do not seem to be interested in the major points of fallible arguments or the challenge of playing on emotions such as fear and anger.

However, fear might turn a debate from constructive dialogue of argumentation to monologue of agitation. Yet, M&S seem to lack interest in sophisticated tactics, e.g. employing appeals and emotion in argument. They seem to have a social epistemology focus when saying that the problem with the lone philosopher is using reasoning to develop coherent systems with a foundation for intuition that is dubious, while they underline groups as the crucial place for scientific reasoning, contrary to popular presentations of the lone genius (2011b, p. 100).

It is interesting that M&S mention groups 57 times in their target article, without specifying the type of groups. Groups in a PSA context as presented by M&S could be small groups, and they refer to Dubreuil, 2010 when spelling the role of sociability by the cognitive capacities of humans, and “small-scale traditional societies” that might include crowds (2011a, p. 60). Dubreuil claims that humans have attained specific abilities for cooperative feeding and breeding through brain evolution (cf. prefrontal cortex), and thus have greater inhibitory control to resist deflecting cooperative behavior. His point, though, is not limited to small groups. In a target article in BBS, 2016, Baumeister et al. depict a comprehensive picture of groups, in form of a continuum in which groups are better or worse than the sum of their members. One extreme of this goes back to Le Bon in 1896 – the crowds are worse than individuals alone. The other extreme according to Baumeister et al. represented by Adam Smith in 1776, how groups as a society produce more than collections of individuals ever could (Baumeister et al., 2016, p. 1).

Still, the PSA by M&S does not focus on group-size, nor that groups always make better decisions, rather they focus on the view that reasoning should work in a context of cooperation as a version of “*genuine debate*” (2011b, p. 99). This gives the impression of a need for future research on differences between groups. Yet, small groups are easier to organize in a lab under controlled conditions. Crowds are hard to control in a lab and in the field.

M&S might reply that there is a difference for level of analysis, and that the perspectives do not compete. Maybe differences are based on various versions of *in situ*. When people are organized in small groups primed for genuine debates while evaluating arguments in a lab they are after the truth. However, when people placed outside a lab are swayed by a skilled flimflammer playing on prejudices and mass communication, the mind seems reduced to a social instrument wherein critical thinking and evidence are circumvented. An optimism about evaluating arguments and being after the truth is reflected in Figure 1.

Figure 1:
Based on M&S and offers four positions (2011a, p. 72):

	Win a debate	Being after the truth
Produce arguments	1	2
Evaluate arguments	3	4

When people evaluate arguments, they are supposedly making a better performance than by producing arguments, and they are more capable when being after the truth than winning a debate. This implies that out of four alternatives, the most promising is within category 4, and the least promising represented by 1. M&S point out that in a debate people might lose interest in evaluation and evidence; they are more interested in refuting their contestant. People do not have much time or interest in checking out flaws in their own arguments but are rather more motivated for identifying failings in their challenger's argumentation. Based on the above arguments, evaluation seems better served by groups than individuals. When people are involved in argument-production, or evaluation, the tendency to use biased reasoning is less when searching for truth than when involved in a debate (2011a, p. 69).

Skilled arguers are not after the truth; they are searching for arguments that defend an opinion. This version of reasoning is not in accordance with the classical view, rather it bolsters "people's opinions, distorts their estimates, and allows them to get away with violations of their own moral intuitions", and behave unfairly. M&S admit that in several cases moral goals are not well served by reasoning. (2011a, p. 68).

M&S claim that arguments can be misused and abused by arguing above the head of one's audience or by lacing arguments by appeals to emotion. In their broadly oriented BBS-contribution the authors refer directly to emotional appeals a couple of times. By doing so, they add, the communicator serves own interests rather than those of the audience (2011b, p. 96). The other comment they have about emotional appeals is that people are rarely receptive to moral arguments, being more easily influenced by narratives or emotional appeals (2011b, p. 101). M&S hold that people are somewhat receptive to moral arguments while evaluating them on the basis of their own moral intuitions.

In summary, M&S acknowledge that people are supposed to have the capability of reasoning in an unbiased way, such as when evaluating arguments and when they are after the truth (2011a, p.72). However, the questionable and typical *in situ* outside a lab is: Debates are not genuine and debaters are not searching for the truth. Moreover, controversies often take place before an audience targeted with sophisticated tactics, emotional appeals and biased beliefs in order to circumvent its critical evaluation. For situations like this the PSA seems to lack interest and has little to offer, while the PHA-analysis of fallacious arguments, dialogue-shifts, and "normative concepts such as justification, good reasons, or critical thinking" (Zarefsky, 2012, p. 176) seems useful for dealing with *in situ* outside the lab.

4. The PHA, fallacious arguments and the PSA

A question is how the PSA with results from the lab can complement the PHA with knowledge found outside the lab. When the empirical research on the PSA shows that people are prone to fallacies as to production and evaluation of arguments (Wolfe, 2011b, p. 92), it seems odd that it does not show interest in fallacies while aware of poor decisions (cf. lack of normative concepts).

M&S claim that reasoning frequently leads to epistemic impairment and poor decisions. This suggests that the function of reasoning should be reconsidered (cf. as argumentative, social and adaptive). When M&S hold that humans are dependent on communication and liable to *misinformation* and *disinformation* and for that reason should aim at distinguishing good arguments from bad ones and hence genuine information from misinformation (2011a, pp. 64, 72), this is far more the case outside than inside the lab. Therefore, it is surprising that M&S are not so interested in research outside the lab, even though they admit that the socially argumentative mind needs to be investigated more thoroughly (2011b, p. 101).

Misinformation is employed in the PSA literature. Disinformation is more closely connected to intentionality and that one party deceives, or misleads or propagates the other party. That fits into a context of the PHA. People in laboratories are doing their best when asked to, rather than as poorly as they can when it works, as it often does in an ordinary mass/communication context of the PHA outside the lab. This implies that the PHA might show interest in critical theory and fallacious arguments, and the PSA in positively discovering widely whatever comes up in a lab furnished with “WEIRD” (cf. Western, Educated, Industrialized, Rich and Developed) people. Reasoning in laboratories seems still to be the center of attraction for the PSA. Reasoning outside laboratories is not much investigated under controlled conditions as to dependent variables; it requires thoughtful and elegant design. The PHA has a huge selection of examples and cases including weaknesses and failures of argumentation and striking versions of fallacies outside the lab, as to e.g. mass-communication.

Yet, Mercier et al., 2017 is strongly critical to teaching fallacies. One of Mercier’s arguments is that having the ability to discover flaws in an argument by argumentation schemes does not imply that this knowledge will be used to overcome myside bias (op.cit., p. 10).

5. Conclusions, implications and future research

When concluding how PHA and PSA might complement one another, it seems reasonable to look into elements of sparse common ground as well as differences to meet the need for a broader basis for argument evaluation as represented by everyday logic. Even when members of a group do not have any opinion of the subject at issue, they have beliefs decisive for production and evaluation of arguments, effectuated by everyday logic and basic elements, such as motivated reasoning, confirmation bias and commitments (cf. political and religious commitments). These basic challenges have been expressed in many different ways and terms. For example, when “accuracy” and “utility” are separable “there is not always selection for accuracy, but instead for a psychology that fixes representations – in oneself and in others – along actuarially beneficial dimensions” (Pietraszewski, p. 87). This is in line with M&S’s claims that arguers are not after the truth, but for arguments supporting their views (2011a, p. 57) and this sounds essential to the PSA, and the PHA. Another question is how biasing effects come about. Production of arguments made by sophisticated tactics and fancy footwork in order to circumvent critical thinking cannot be excluded. The PSA appears more optimistic, i.e., having trust in the other party by downplaying the risk of being misled (M&S, 2011b, p. 96). This optimism might be an outcome of collecting data in a lab and limiting *in situ* by *in vitro*.

Without being explicit about the limitations of their empirical references and data *in vitro*, M&S find that people deliver poor performance the more standardized a reasoning task is (cf. e.g. drawing simple *modus tollens* tasks), but they regard people as good informal arguers, even in debates when trying to convince the other party, and better when representing others. As claimed in a peer commentary, a “WEIRD” selection of *in globo* represents less than 12% of individuals (Narvaez, 2011, p. 84), without knowing if another selection and a representation of the universe would make any difference.

The PHA observations outside the lab give the impression that it is hard to draw a line between producing arguments and evaluating them. When the function of reasoning is social for the purposes of convincing by argumentation – arguments are searched for and when needed, constructed for that purpose – argument evaluation is not reasonably protected against contamination by social mechanisms such as confirmation bias and motivated reasoning. In the lab control is easier.

The lab seems to be a marker of the difference between the PHA and the PSA. Examples outside the lab show that people use informal logic so that they perform badly on rational standards, as long as it works, even in groups (cf. group-think on WMD). Both proponent and respondent might give psychological support, even though it lacks logical support. By that, reasoning and argumentation might have a devastating epistemic function for both evaluating and constructing arguments.

The PHA and research outside the lab have for decades pursued questions on circumventing evidence with regard to reasoning and choice (cf. people are not performing as well as possible, rather as badly as possible if gaining support for a certain conclusion or action). Such findings were published in comprehensive research from *the Institute for Propaganda Analysis* (IPA) conducted between WW I and WW II. This is interesting and comprehensive literature, mainly on mass-communication and normative theory.

If reasoning outside the lab could be investigated more completely by the PHA and the PSA, the insight and tradition of the PHA on evaluating arguments could be complemented by the psychological insight of the PSA tradition. And, research outside the laboratories might lead to new experimentation and findings, and over time promote reconsideration of the ties between the PHA qua informal logic and formal logic as to argumentation schemes and logical argumentation structures. Combining argumentation schemes and logical structure with research that gives insight into what is “psychologically relevant” might fruitfully alter argument evaluation.

Yet, Mercier et al. (2017) claim that teaching fallacies is not the answer. A possible PHA-response is that refashioning the concept of fallacy and squaring it into argumentation schemes might better identify arguments such as e.g. slippery slope argument, argument from expert opinion and *argumentum ad hominem*. And the PSA underscores the importance of dialogue that in the past has been ignored by the PHA to the advantage of formal logic and philosophy. Simply ousting argumentation schemes does not seem realistic; they are not going out on date, they might even strengthen their position in the argumentation literature.

What the PHA and the PSA agree on is that training makes a difference. Kuhn (2011) and Wolfe (2011) found that training leads to improvement in argumentation skills, compared to a deficit of these skills before training (Kuhn, p. 83, Wolfe p. 93). What is interesting is that exercise on meta-level as to communication about discourse seemed the easiest to improve, including skills in critical thinking and drawing argument schemes to identify arguments and argumentation. M&S comment that improved argumentation skills might be crucial for achieving success in modern academic life (2011b, p. 98). On the other hand, they hold that you might be a skilled arguer without having the knowledge to recognize argument forms and depict argument schemes, even though mastery of argument schemes creates better essayists, and maybe a better debater, as well as improved success in academic life (ibid.).

With or without argument-schemes it appears engaging to expound different ways of “arousing emotions” in front of an audience, and how dissimilar categories of “arousing emotions” and the comprehensive impact of “psychologically relevant,” might decisively influence argument evaluation. One might achieve increased knowledge of how dialogical shifts function as sliding transference from investigation and epistemic vigilance to eristic dialogue (cf. non-awareness of aroused emotion and loss of interest in evidence). Hence, after dialogue shifts into eristic, people are disengaged as to evaluating strong, weak and fallacious

arguments. Literature on fallacious arguments seems so far to apply terms that are more nuanced for the analysis of argument evaluation than the work of M&S.

One question is if outside the PSA-laboratories there is a significant and systematic difference between individual reasoning and group reasoning regarding deliberation and eristic dialogue. Another is if group discussions provide an efficient way of holding the confirmation bias in check, compared to the effects of teaching critical thinking skills in order to overcome biases on a purely individual basis (M&S, 2011a, p. 65).

When field experimenters or lab experimenters are aware of broadening *in situ* with *in vitro* and *in vivo*, the outcome might be advantageous coordination of theory and data. Maybe the most promising future studies for informal logic, is broadening *in situ* by combining the PHA and the PSA for improving argument evaluation as to e.g. groups and debates. Based on what reasoning can do, a normative perspective is needed in addition, (cf, excerpt from Groarke, 2011, p. 190): “In real arguments arguers continually omit countervailing evidence and employ hidden premises, illegitimate emotional appeals, post hoc reasoning, and myriad of other fallacies that hinder rather than promote sound judgment...”.

In addition to broadening “*in situ*” for improving argument evaluation by including “*in vitro*” – in the format of PSA – and “*in vivo*” – in the format of PHA – it seems relevant that argument evaluation is related to an effectiveness standard combined with normative concepts.

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