

Who's the TSAR? Towards the True Science of Argument and Reasoning
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There is plethora of scientific disciplines each of which investigates, in its own way, reasoning and argument as its linguistic implementation. Essentially distinct with respect to their subject-matters and methods, logic, cognitive psychology, argumentation theory, rhetoric, artificial intelligence, neuroscience, decision making study and, definitely, cognitive science, address cognitive processes and reasoning between them from different perspectives and come to different and oftentimes controversial conclusions. Hence, a natural question at this juncture, What is (if any) a True Science of Argument and Reasoning? Figuratively speaking, who's the TSAR?

In the course of my talk, I will touch on logic as a front runner for the label of True Science of Argument and Reasoning, show an inadequacy of this claim, and then zero in on the issue of intersubjectivity of argument in conjunction with its convictive force. Finally, I will manifest my idea of such a science of reasoning.

Historically, logic with some justice was recognized as a branch of science that examines valid reasoning (correct arguments). However, recent findings have shown, that, according to G.Harman [1], "logic is not a theory of reasoning and a theory of reasoning is not a logic". More precisely, it means that sets of natural arguments and a set of formal inferences (where a formal inference is interpreted as a transition from premises to conclusion determined by a certain formal theory) just intersect, but do not coincide. In other words, there are natural arguments that are considered invalid in any formal theory, and there are formal inferences that have nothing in common with natural reasoning. 'If A, then B; not A, hence, not B' is a prominent example of the former, while 'A & not A implies B' exemplifies the latter.

This paradigm shift immediately engenders the problem of finding a new crucial criterion for evaluating arguments. In logic, it is the concept of entailment (logical consequence) that hallmarks correct reasoning: it is impossible for the premises to be true and conclusion – false simultaneously (under the same interpretation of non-logical parameters). Where one has rejected logical approach, one needs an appropriate substitute for an entailment relation to distinguish a 'good' argument from 'bad'. It is not a purely theoretical academic question – rather, it concerns everyday practice of argumentation and communication. While reasoning and arguing, one needs something as a safeguard against errors and aberration. And what strikes most is the fact that we do have this magical solution property, which allows human beings in most cases avoid fallacies. This ability is often called 'common sense', and indeed our capacity of telling a valid reasoning from invalid rests upon a certain common embedded cognitive mechanism. The only thing missing is an adequate explanation of this mechanism, with just a tiny little thing to do – namely, to provide an adequate explanation of this mechanism.

With that, in my view, it might be useful to closely examine the so called 'argument schemes' (sometimes also labeled as 'argumentation schemes'). A systematic and exhaustive consideration of argument schemes and their role in human reasoning, social communication and artificial intelligence can be found in [3], [4], [5]. Usually argument schemes are interpreted as stereotypical, not necessarily deductive, patterns of reasoning, consisting of a set of premises and a conclusion. In the context of the current discussion, I would like to emphasize that argument schemes are (1) stereotypical (2) patterns of reasoning. In other words, they represent the desideratum – the sought-for cognitive mechanism that provides a simultaneous invention of arguments and their verification.

This twofold role of argument schemes stems from Aristotle's Topics, where *topoi* (or *loci* in Roman tradition) literary mean "places to find something" – depositary of intersubjective

information which endues arguments with convictive force. In modern history, Perleman and Olbrecht-Tyteca in their famous *The New Rhetoric*, considered argument schemes ‘as loci of argumentation because only agreement on their validity can justify their application to particular cases’ [2, 190].

So far so good, we ascertain that argument schemes justify arguments, make them convictive and persuasive, but what in turn justifies argument schemes? As far as I am aware, it is a semi-formal structure of argument schemes that conceals the origin of conviction. The role of a semi-formal structure in argument schemes is very similar to that of logical form in the validating moods of deductive reasoning.

As an instructive example consider the argument scheme From Expert Opinion:

(1) **e** is an expert in domain **D**. (2) **e** asserts that **p** is true, provided (3) **p** is within **D**. Therefore, **p** is true.

Here we reckon with both parameters for non-logical terms (**D**, **e**, **p**) and ‘built-in’ predicate term (‘**x** is expert in domain **y**’). The latter endows this argument with convictive force to. I presented this approach in a greater detail in my paper [6].

Quite predictably, I consider the cognitively based and semi-formally presented argumentation theory to be the most suitable and eligible candidate for the role of the true science of argument and reasoning.

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