Rhetorical Heuristics: Probabilistic Strategies in Complex Oratorical Arguments

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Abstract   The study describes a method created for the analysis of persuasive strategies, called rhetorical heuristics, which can be applied in speeches where the argument focuses primarily on questions of fact. First, the author explains how the concept emerged from the study of classical oratory. Then the theoretical background of rhetorical heuristics is outlined through briefly discussing relevant aspects of the psychology of decision-making. Finally, an exposition of how one could find these persuasive strategies introduces rhetorical heuristics in more detail.

Keywords   Classical rhetoric · Oratory · Argumentation theory · Persuasive strategies · Heuristics

1 Introduction

In the following study I am giving an outline of an experimental method to describe the argumentation of complex legal and political speeches in ancient (and, to some extent,[1] in modern) oratory, which I will call "rhetorical heuristics".[2] I am also

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[1] To the extent that modern oratory applies the rules and techniques of classical rhetoric in arguments based on facts and conjecture. The comment should also be used as a caveat that in my research on rhetorical heuristics I worked primarily on ancient speeches and looked at only one modern example where heuristics can be identified. It should therefore be taken as a theoretical possibility which requires further study, especially on Greek and contemporary oratorical material.

[2] It is important to note that the term "rhetorical heuristics" has already been used before in rhetorical scholarship and argumentation theory. However the meaning of the word "heuristic" used in these studies (as far as it can be made clear in every instance) is not simply different from mine, but in many sense fundamentally opposite to it. They regard classical rhetorical schemes of the *inventio*, the art of finding rhetorical material, like the *topoi* or *staseis*, places i.e. grounds of proof, themselves as heuristic strategies

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bringing forward examples to demonstrate how one can look for such persuasive strategies in extant Greek and Roman speeches in a way that is different from traditional rhetorical approaches (e.g. stasis-theory, the topics or enthymemes). In creating the concept I looked at ideas and strategies of persuasion in classical rhetoric, the psychology of decision-making, informal logic and mathematical problem-solving. The purpose of my research was to find a method of rhetorical analysis capable of uncovering strategies that neither ancient rhetoric nor modern scholarship has so far been able to describe.

Rhetorical heuristics is an analytic method to explain persuasive strategies in a comprehensive form within long and intricate forensic or political arguments. I will call rhetorical heuristics a set of complex and flexible strategies based on probability and some (often fallacious) forms of inductive reasoning in court or assembly speeches. The adjective "heuristic" points to a number of crucial features of the concept. Most importantly, from a practical perspective the method of rhetorical heuristics can be employed as a device to *discover* the (presumably) most persuasive argumentative strategy among possible alternatives in a particular legal or political case. Furthermore, heuristics in rhetorical arguments could also be considered an empirical method that students of rhetoric may use to develop strategies for themselves creatively when they face in practice argumentative problems beyond the capability of classical rhetoric. Strategies that are called heuristics also indicate a type of procedure in preparing the speech primarily through applying a series of non-systematic or rule-of-thumb strategies rather than relying on the algorithmic use of rules of the *inventio* or *dispositio*, arrangement of rhetorical material, (e.g. as they are found in the *Rhet. Herenn.*). Instead, it looks for possible argumentative strategies as models used by other orators that could be applied with certain changes in the present case.

The concept of rhetorical heuristics therefore implies that these argumentative strategies should not be viewed as prescriptive algorithms to be applied almost mechanically to certain groups of cases. Rather, they should be understood as possible models for a range of cases that share a number of similarities, for example in the availability, clarity or arrangement of evidence. To learn the application of rhetorical heuristics one needs to see how individual strategies as models can be adapted innovatively to the demands of particular cases. Rhetorical heuristics can influence and sway the decision-making processes of the listeners by imitating common forms of human probabilistic reasoning.[3] They could provide a functional

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that can be applied in composition or media analysis (Heath 1994; Laurel 1967; Underwood 1980). I demonstrated (Tahin 2009) that in the practice of ancient oratory these schemes alone were not enough to provide complex persuasive strategies in individual forensic or political cases.

[3] For the concept of imitation see *Rhet. ad Alex*. 1428a–29a. The author there uses the word *paradeigmata*, patterns or models, to describe the mental propositions and reasoning patterns in the mind of the audience the orators need to imitate to make his speech both plausible and probable. To imagine a model of the application of rhetorical heuristics, one may also think of how chess players learn to use different strategies from beginner's to master level. At the beginning of the process, they follow the strategies they learnt rather mechanically. Later on, as their knowledge of different strategies increases and becomes more complex, they combine strategies and use them in a much more abstract and intuitive way (Mero 1990).

explanation why an oratorical argument in a case has been arranged in a particular way, especially when that arrangement does not follow the advice of ancient rhetorical handbooks.

The purpose of rhetorical heuristics is to show how the speaker can strengthen the probability of his argument against his opponent and how he can make the jury pass a favourable judgement after balancing the relative probabilities drawn from the available evidence on both sides. The novelty of rhetorical heuristics could be perceived by the opportunity they provide to evaluate arguments from a strategic perspective of persuasion and not simply through the rules of classical rhetorical theory being adapted to a particular type of case.[4] It is an approach that allows someone to regard particular persuasive arguments as strategies to manipulate the cognitive processes in the minds of the listeners through diverse and constantly evolving forms of probabilistic reasoning.

I will first introduce the concept of heuristics and explain why the student of ancient oratory may use an alternative method in describing the argumentation of classical speeches. Then I will outline the theoretical basis of my concept, offer some explanations on the system and describe how one can use the concept in uncovering the argumentative structure of speeches. Finally, I will give examples of how rhetorical heuristics could be used in analysis and practice. I should acknowledge that although rhetorical heuristics is a practical approach to oratory I will devote most of this writing to theoretical considerations which I regard as essential if someone is to obtain a clear idea of how heuristic strategies could be found or applied in complex arguments.

Throughout the analysis I use the idea of probability in the sense of likelihood as opposed to certainty. Probability is a fundamental element of rhetorical reasoning. Rhetorical heuristics has to render the conclusion of the whole argument more likely than that of the opposition and induce the audience to accept it as a decisive proof in their final decision. However, one has to be aware that in ancient rhetoric (and to some extent, in philosophy) the concepts of probability, plausibility, credibility and persuasiveness were not always easily discernible.[5]

2 The Concept of Rhetorical Heuristics

The method of rhetorical heuristics originates from a functional and argument-oriented study of selected forensic speeches of Marcus Tullius Cicero[6] and a

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[4] The relationship of classical rhetoric and rhetorical heuristics should not be considered antagonistic. Both approaches describe persuasive oratorical arguments from different perspectives. I regard rhetorical heuristics a more advanced stage of rhetorical analysis that intends to explain creative procedures of producing an effective argument in a complex rhetorical situation where evidence is scarce or uncertain or external conditions are highly contingent.

[5] I refer especially to the inconsistency in using the words *probabile* and *veri simile* in the rhetorical and philosophical words of Cicero. The Greek usage of *eikos* and *pithanon* was not much more consistent. (Glucker 1995; Görler 1991).

[6] There is a vast scholarship on the rhetorical analysis of Ciceronian speeches, of which I cite only those that are directly relevant to my research. It is impossible to evaluate that scholarship even in outlines. I would only like to make the point that almost all of the studies on the persuasive aspects of Ciceronian

number of Greek orators, such as Antiphon, Lysias and Demosthenes.[7] In reading the speeches I discovered that, although a number of studies dealt with the task of describing and explaining the argumentative structures of court speeches, there were nevertheless various kinds of extended probabilistic strategies not illustrated either by classical rhetoricians or by modern scholars.[8] In classical rhetorical scholarship the methodological framework for analysis is in general provided by ancient rhetorical treatises. These give a systematic treatment of rational and emotional persuasive strategies[9] to prove a certain conclusion in individual cases and persuade the jury to accept it. Such argumentative strategies (e.g. *topoi* or topics[10]) are normally discussed in the process of preparing the speech, the so-called *inventio*.

While contrasting the argumentation of several Greek and Ciceronian speeches with argument models offered by the *inventio*, I found that rules on specific arguments described in them (e.g. the *argumentum probabile*) do not explain how the orator developed a series of complex arguments found in speeches in support of the probability of the final conclusion. Knowing the rules does not guarantee that I can apply them in arguing about the probability of my conclusion through a long and complex argument more effectively than my opponent. For example, the description of various types of rhetorical arguments in Quintilian's *Institutio Oratoria* 5.10–14 (e.g. topics, examples, enthymemes, epicheiremes and syllogisms) provide a large store of models for arguments applicable in different parts of the speech, but especially in the *argumentatio*. However, he is not offering advice

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Footnote 6 continued

speeches rely to a greater or lesser extent on the categories and general approach of classical rhetoric, from which I tried to distance myself gradually while uncovering strategies based on probability. However, that does not in any way mean that I am not indebted to the works of Ciceronian scholars, especially those of Stroh, Classen and Powell. (Heinze 1925; Solmsen 1938; Neumeister 1964; Stroh 1975, 2000; Classen 1985, 1985; May 1988; Craig 1979, 1993; Powell and Paterson 2004; Powell 2007).

[7] My research concentrated mainly on the analysis of Ciceronian speeches. I nevertheless looked at a small number of Greek speeches (e.g. Demosthenes 19, Lysias 7 and 16) and a modern one (US Secretary of State Colin Powell's presentation to the UN Security Council on the US case against Iraq on 6th February 2003) as well to test the application of the concept in material other than Ciceronian oratory.

[8] This problem is not new (see especially Neumeister 1964; Stroh 1975, 2000; Classen 1982, 1985). However, attempts to resolve it, despite many invaluable results, always remained within the realm of classical rhetoric with its limitations.

[9] A definition of *inventio* is given by the *Rhet. Her.* 1.2.3 *Inventio est excogitatio rerum verarum aut veri similium, quae causam probabilem reddant.* ("Invention is the thinking up of matters which are true or similar to the truth, which would render the case plausible.") The most detailed studies on the rules of the invention are *Rhet. Herenn.* 1–2, Cicero *De Inv.* and Quintilian *Inst Or.* 4–6. (see also Lausberg 1990: 40–240).

[10] The theory of the *topoi* first summarised by Aristotle in his *Topics*, then disseminated by such works as the *Rhetorica ad Herennium* or Cicero's *Topica*. (The topics have a vast literature in modern argumentation theory. The best available treatment of the subject today is Rubinelli 2009). Topics as an intricate and flexible system of argumentation provided schemes for a range of individual arguments that could be applied in speeches. However, the system of topics did not offer rules on joining individual arguments in a strategy, which is why I do not consider them rhetorical heuristics. Cf. Quint. *Inst. Or.* 5.10.119–120.

on how one could join these individual arguments in an extended argumentative strategy that runs through the whole speech.[11]

In my research of Greek and Ciceronian oratory I attempted to show that it is possible to discover complex strategies resembling common forms of probabilistic reasoning, which could not be explained solely on the basis of classical rhetorical arguments. Not being part of the classical system, these rhetorical heuristics could have been developed by orators independently after completing their rhetorical education. To achieve this they could use observation and further study (of a kind reflected in Cicero's De Oratore) of oratorical practice or rely on intuition and experience to create again and again innovative persuasive techniques demanded by a constantly changing forensic environment.

It should therefore be remembered that rhetorical heuristics is a form of argumentative analysis independent of classical rhetoric. Ancient rhetorical handbooks offer models on making a speech in all its aspects from preparation to delivery. Rhetorical heuristics, however, concentrate on the argumentative analysis of individual speeches and how the results of such analysis (i.e. certain strategies) could reappear in other speeches as possible models. They attempt to explain extended argumentative strategies based on probabilistic reasoning to influence the final decision on the case at hand.

The principal idea behind rhetorical heuristics is that the argument of a speech can only be successful if it can influence or manipulate the way the members of the audience (i.e. judge, jury, senators or members of the assembly) come to a conclusion after balancing the competing probabilities on both sides of a case. In real life situations, when a decision has to be made on a case, the value of a speech depends solely on whether it could effectively persuade the jury about the relative strength of its probabilities in comparison with the opposing side.[12] Therefore, only those arguments could have a chance of being successfully persuasive which are based on the observation of how people in general make decisions with a degree of likelihood based on inadequate evidence.

Strategies capable of manipulating the audience's mind could only exist in practice if orators developed intuitively an understanding of how people decide in cases in which a certain decision had to be made within a set amount of time while a systematic comparison of evidence was impossible. Observing how people come to

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[11] One reason for this was that Quintilian wrote his book for the pupils of rhetoric, who were not expected to perform at the level of an experienced orator. (A fairly good analogy here would be a difference between an intermediate handbook on chess strategy and the knowledge and experience of a chess master, which cannot be taught by a simple handbook.) Another reason was that the *partes orationis*, parts of speech, provided the overall structure of the speech, of which the *argumentatio* was only one element.

[12] Cf. Aristotle *Rhet*. 1.1.1 "for everyone tries up to a certain extent both to prove by testing and sustain an argument and to defend themselves and accuse (others)" and 1.2.1 "Let us define rhetoric as the ability to discover what is plausible in each (possible) case." These may sound a commonplace, but even Aristotle does not fully bring out how intrinsically the adversarial nature of oratory is related to the inherent plausibility and probability of one's argument.

a decision under such contingent and pressing circumstances could make them learn to manipulate that process for their own advantage.[13]

The fundamental question is how we can know about the decision-making strategies which the orators are supposed to have learnt to imitate and influence in their own arguments. A possible answer is cognitive heuristics people use as quickly available rule-of-thumb devices. They are a collection of simple and effective ("fast and frugal") rules coded in the human mind that enable people to make decisions quickly (albeit often at the price of considerable mistakes due to cognitive biases), instead of using mathematical methods (e.g. Bayesian analysis) in a systematic way to judge the probability of different outcomes.

What is the relationship between rhetorical and cognitive heuristics? It is clear from above that whatever strategy the orator uses, it has to appear probable and plausible to the audience. Therefore, to make his argument likelier than that of his opponent, the orator who wants to argue effectively needs to observe in his practice examples or patterns (e.g. like the *paradeigmata* of *Rhet. ad Alex.* 1428a–1429a) of mental inferences such as cognitive heuristics describe, that members of the audience would use in decisions based on likelihood, inside or outside the courtroom. Having obtained a set of probabilistic inferences people commonly apply, he could use them as models, examples or types of argument in constructing extended argumentative strategies of a speech. If successful, these can influence or manipulate the decision made on the case.

These cognitive heuristics can be used (partially) as models for argumentative strategies because they work on the basis of implicit rules or procedures that allow people to respond to problems or questions in simple every-day or more complex situations. Listeners and decision-makers would have more likely made a decision favourable to the orator if an argument is broadly similar in its structure to the cognitive processes they themselves would use in judging the relative probability of opposing claims. That way the conclusion would look more plausible too.

It is important to note that individual cognitive heuristics do not themselves explain how rhetorical heuristics can be developed as part of a complex argumentation. This is because of a number of important differences between them. However, they can serve as simple initial models for specific strategies. Understanding these differences will help to clarify the way rhetorical heuristics operate in speeches.

Heuristics in cognitive psychology are understood as short mental shortcuts to assist someone to make quick inferences without a systematic study of available evidence. Rhetorical heuristics on the other hand are considered extensive strategies in an often lengthy rhetorical (i.e. spoken or written) argument based on a weak or incomplete set of evidence. They are made up of a series of arguments that support the probability of the conclusion in a way as to bring forward a strong, appealing and credible case.

Psychological heuristics describe models of how individual people often make judgements based on probable conjectures. Rhetorical heuristics describe argumen-

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[13] Such an understanding is reflected from the unique definition of *eikos* in *Rhet. Alex.* 1428a. The author there advises the orator to make probable claims based on patterns, models or examples (*paradeigmata*) found in the minds (*en tois dianoiais*) of the listeners. (cf. Burnyeat 1994).

tative strategies based on probability that orators could use in influencing[14] a group of people by applying probabilistic inferences that are (structurally or otherwise) similar to psychological heuristics. In short, the main differences between the two types of heuristics can be explained by their dissimilar sphere of application and be roughly described by the short/long, mental/verbal and simple/complex dichotomies.

In the concept of rhetorical heuristics I borrowed a number of features of psychological heuristics. Most importantly, persuasive strategies in the speeches I identified as heuristics appear to manipulate the decisions of the listeners by creating probabilistic arguments which appeal to general forms of cognitive reasoning. The process of manipulation could be intricate and may only be achievable through gradually developing a complex argument that presents probable reasons derived from credible evidence in a deceptively clear arrangement. For example, if I observed how people usually think about their own country and what arguments they consider in this question acceptable and even persuasive, I could argue with greater likelihood about the question whether the person who agreed to the terms of a peace treaty on my country's behalf acted honestly or not.[15]

Using psychological heuristics allows someone to make reliable decisions in the majority of cases, especially where previous experience corroborates one's perception of how to assess the truth claims of conflicting probabilities. However, despite bringing usually good results, heuristic decision-making may lead to biases and errors in judgements as a result of non-systematic information processing. From the orator's point of view the cognitive biases that could render cognitive heuristics inaccurate in individual cases could offer numerous opportunities to conceal or cover up inadequate evidence and manipulate the jury into making a favourable decision.

A number of psychological heuristics have been identified since the first study on them was published by Tversky and Kahneman in 1974. For a more detailed description of cognitive heuristics see Kahneman, Slovic and Tversky (1982); Gilovich, Griffin and Kahneman (2002); Michalewicz and Fogel (2000). I present here three major heuristics that appeared in the original study, which describe the most common processes of making a decision. The first one is called the representativeness heuristic. It is a simple rule of thumb that people apply to judge the probability of a specific proposition in relation to the degree with which it is representative of a broader and well-known category instead of relying on basic probability calculus. Such form of reasoning would often bring good results in

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[14] A number of studies describe the psychology of persuasion from an inter-personal viewpoint (Zentai 1998). In advocacy the most delicate task of the orator is to present a speech in a way that the audience would follow and accept its argument without *assessing it critically* and comparing it to an opposing argument.

[15] Just as Demosthenes does in his speech called On The False Embassy. It should nevertheless be pointed out that it is not enough simply to use reasons that the majority of the people would accept as true. The task of the orator or arguer is to make general probabilities applicable in a particular case. This can only be done if one considers what the listeners would accept as probably true in the case which he is arguing about.

everyday life, yet it is liable to a number of biases arising from the base-rate fallacy, ignoring sample sizes and regression to the mean.[16]

The second major heuristic is called availability. It describes a form of reasoning where people assess the probability of an event by the ease with which instances or occurrences of that event can be brought to mind. The availability heuristic can be a useful tool to assess the probability of a piece of evidence or a claim on the basis of whether it belongs to a larger, more frequent or to a smaller, less significant group of instances.[17] However, judging the probability of a claim can be easily distorted by a manipulative presentation of that claim.

The third major heuristic is called anchoring and adjustment. At first sight it looks very similar to the availability heuristic. People use the heuristic in a situation where the scarcity of available information makes it difficult to start the evaluation of a problem. In such cases individuals often estimate prices, quantities, values, distances and likelihood by anchoring at an initial value and adjusting their answer to that point. Naturally, such estimates could be easily manipulated by deliberately adjusting the initial value. The heuristic is based on the so-called focusing effect which occurs when people attribute too much importance to one aspect of a problem. In the course of a persuasive argument the orator could easily influence the decision to be taken by providing the anchor point at the beginning (e.g. in the form of a major evidence) and then adjust the argument to that.[18]

3 Examples of Rhetorical Heuristics in Classical Oratory

In the analysis of forensic speeches of Cicero and the Greek orators I looked for patterns of argument in support of the probability of the final conclusion that can be taken as a comprehensive strategy going beyond the traditional parts of the speech. I found that these strategies, called rhetorical heuristics, often represent logically faulty or legally inadmissible forms of probable reasoning which nevertheless appear highly persuasive. Some of these heuristics may model the basic pattern of cognitive heuristics, but others have entirely different formal characteristics. A common element in all types is the—often disguised—reliance on probabilities

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[16] An example would be to judge whether Paul is an investment banker or a teacher by looking at his qualities. If Paul shares some stereotypical qualities of bankers, like good mathematical and analytical skills and the love of luxury, then people would most likely judge him to be a banker than a teacher, regardless of the base rate of bankers and teachers. When searching for an answer, people would also consider more the congruent characteristics of Paul (like his analytical skills) and ignore the incongruent ones (like his aversion to taking risks).

[17] For example, watching a series on air accident investigations could make me come to a conclusion that air travel is far more dangerous than, say, driving my car every day, whereas statistically the opposite is true.

[18] The classical example of anchoring and adjustment heuristic is the study where people were asked to judge the percentage of African countries as members of the United Nations. Those who were asked "Was it more or less than 45%?" stated lower values than those who were asked whether it was more or less than 65%. The experiment shows that in complex problems the mind tries to work out an answer by searching for data that we already know. Supplying such data greatly affects the estimate of probabilities.

drawn from the available evidence, their versatility and adaptability to different cases.

An important question that needs to be answered is how to set out to discover such heuristics. Naturally, a detailed description of rhetorical heuristics in an individual case always requires a close examination of all the information available. Such information could include the reconstruction of the historical or political circumstances, legal and procedural issues, and most importantly the evidence at hand. The purpose of such an inquiry is not simply to understand the case in its setting, but to perceive as clearly as possible what degree of probability the orator is trying to establish with his claims in support of a case and how he does that.

Once the evidential basis of the case is established, we have to look at all the interdependent parts of the argument and establish the line of reasoning that leads to the conclusion. Here either categories of informal logic for the theoretical and practical aspects of argumentation analysis see Eemeren and Houtlosser (2002); Kahane (2002); Tindale (2004); Walton (1989) and Zentai (1998) or traditional rhetorical categories and divisions could be used. In every case we must bear in mind that each element of the overall argument has to be interpreted in light of how much it contributes to the probability of the overall conclusion and whether the arguments form a comprehensive strategy aimed at influencing the mind of the audience. Such an analysis is likely to provide the fundamental argumentative plan of a speech, even if our knowledge of the facts is heavily biased and scanty.

The description of rhetorical heuristics suggests that the orator had to adjust his argument to common beliefs and forms of reasoning which the jury was likely to use. Then he had to present a probable and persuasive case in line with these views. The only criterion of an effective heuristic is how successfully it can guide the mind of the jury to make a particular decision after assessing the contrasting evidence. The orator had to hold three cases in his mind at a time, that of his own, the opposition and that of the jury, balancing out all their respective probable propositions.[19]

In the analysis of selected Ciceronian (and Greek) speeches I identified and described seventeen heuristics that give examples of how heuristics may function as fundamental elements of specific legal or political arguments. These heuristics do not necessarily give a complete overview of the argument, but may only indicate the dominant strategy in an intricate legal or political case. Each individual heuristic must be mapped out in detail in its host argument as giving a simple list or description does not necessarily reveal their complex structure and relationship.

I will give a brief description of the seventeen heuristics, indicating their relationship and basic character. Similarities or overlaps may exist in specific

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[19] Cf. Cic. *De Or.* 102 *Equidem soleo dare operam, ut de sua quisque re me ipse doceat et ut ne quis alius adsit, quo liberius loquatur, et agere adversarii causam ut ille agat suam et, quidquid de sua re cogitarit, in medium proferat. Itaque quum ille discessit tres personas unus sustineo summa animi aequitate, meam, adversarii, iudicis.* "As for my part, I used to take care that a client himself should explain his case to me and that no one should be present, so that he would speak more openly. I also argue the case of the opposite side so that he would bring forward any matter with regards to his own case. In that way, when he leaves, I assume three characters with complete equality, mine, that of the opponent and that of the judge."

instances between heuristics in different groups.[20] Heuristics like the 'weakening by alternative explanation', the 'narrative consistency' and the 'circumstantial ad hominem' have been classified separately from other heuristics. They do not directly argue about the probability of available evidence, but use other (e.g. narrative) techniques to strengthen the probability of the final conclusion.

A number of heuristics could be grouped together according to common features. The 'changing the issue' heuristic, the 'replacement' heuristic and the 'disproportionate probabilities' heuristic are, in broad terms, akin to each other in that they distort the order of importance of relevant evidence in the argument. The first heuristic is developed almost unnoticeably by gradually providing irrelevant evidence through the argument, whereas in the second the key misleading proposition is pushed to the front right at the beginning and all further evidence is put forward along the lines the heuristic determines.[21] The 'disproportionate probabilities' heuristic may be said to work through devoting considerably different amount of reasoning space to arguments not equally relevant to the issue under debate. The disproportionate allocation of space to proofs is disguised as a seemingly ordinary series of evidence[22] directed by objective chronological or logical considerations.

The 'mirroring probabilities', 'the balancing of false probabilities' and the 'multiple alternatives' heuristics form another group of related strategies. They all agree in setting opposing or alternative probabilities alongside each other in the argument in order to suggest a choice between them. In the case of the 'mirroring probabilities' heuristic the major probable argument is matched with another one that argues about the same proposition yet arrives at an opposite conclusion. The 'multiple alternatives' heuristic argues about alternative probabilities which may be irrelevant yet give effective support to the probability of the main proposition. The 'balancing of false probabilities' heuristic weighs arguments from probability drawn from inadmissible or false evidence against each other. In all three cases the opposing probabilities may be real or deliberately irrelevant. But even if the probabilities can be judged irrelevant to the case, they might still have to be presented in order to cover up missing or incomplete evidence. It may frequently be the case that only through probable inferences can someone investigate the validity of a charge, so this approach can be fully justified.[23]

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[20] A good example is the connection between the 'replacement' heuristic in Cicero *Clu*. 1–9 and the 'anchoring and adjustment' heuristic in *Clu*. 11–8.

[21] That shows a plausible relationship between the 'replacement' heuristic and the 'anchoring and adjustment' heuristic, a form of cross-fertilisation.

[22] In the case of Cicero *Clu*. 9–160 and 161–94 'disproportioning' is realised by the help of the 'narrative consistency' heuristic, that helped maintaining the apparent necessity of telling the story of Oppianicus senior's crimes with the emphasis on the infamous *iudicium Iunianum*, the trial of Oppianicus senior before Iunius.

[23] As is the case in *Antiph*. 5., where the charge against Euxitheus the Mytilenean, for killing the Athenian Herodes rests almost completely on arguments from likelihood. The confession of a slave, supposedly present at the crime scene, under torture and a suspicious message by Euxitheus could prove the involvement of the defendant. The speaker, however, did not have firm counter-evidence to prove his alibi (although he pretends to have it), he had to attack the certainty of the charge with probability arguments.

Another group, including that of the 'converging probabilities' heuristic and the heuristic of 'division', is fundamentally based on the idea of dividing up an issue into several probable propositions; to argue these separately makes a complex case manageable and plausible, especially in the face of a strong counter-argument. The 'converging probabilities' heuristic determines in advance several lines of probable argument that are considered giving the most substantial support to the final conclusion, while disregarding the order of arguments advanced by the opponents. With the 'heuristic of division' one argues against a series of related items of evidence by breaking them up into a number of seemingly independent arguments and thus decreasing the probability of their original combination.

The strategies that use an initial proposition as the point of comparison all stem from the 'anchoring and adjustment heuristic'. The speeches open frequently with a surprise claim that will later be used as a focal point for the argument that follows. One has to recognise in these speeches how the principal proposition is introduced and to what extent the rest of the argument is adjusted to it. In the case of the 'heuristic of dominant probability', the first major proposition unequivocally governs the probability of all the other arguments, even if that is not mentioned explicitly. The common rhetorical use of the 'anchoring and adjustment' heuristic differs from the previous heuristic in that the initial proposition is argued over a period of time and gains momentum that way. The 'pre-emptive' heuristic can be best understood as a form of 'begging the question' fallacy, as it argues at the beginning for a proposition seemingly related to the major issue, while it subtly assumes that the probability of that issue is already proven.

Looking at these descriptions, someone may argue that it is very difficult to give precise criteria for the identification of individual heuristics. As a result, the assessment of heuristics would inevitably lead to the inclusion of subjective criteria into the process of description. That seems a valid objection and indeed provides a great challenge to the concept. It is clear from the categories outlined above that due to their complexity there are no simple or clear cut rules for the identification of specific rhetorical heuristics. Diverging assessment of inadequate evidence or the nature and arrangement of a particular argument could enable scholars to arrive at different explanations about individual argumentative strategies.

However, the possibility of differing (but not necessarily conflicting) descriptions of particular strategies should not, perforce, have to be regarded as the weakness of the concept. The presence of several (overlapping) heuristics in one argument may actually be the sign of highly elaborate and intricate persuasive strategies. Although someone may theoretically be able to apply different heuristics to the description of the same argument, that process cannot merely be based on subjective insights.

There could be objective criteria of analysis borrowed from such fields as informal logic, which need to be observed in the process of describing heuristic strategies. Such heuristics are always embedded in an argument on a particular real-life incident, based on various forms of evidence. To identify a certain heuristic, one has to justify his/her choice by examining every element of the argument structure (including premises and conclusions, the evaluation of evidence, its strength or probability) and explain how details of that description match the definition of the

heuristic presented in the analysis of other forensic cases. Only thus can we avoid a wholly arbitrary and indiscriminate application of the concept.

4 Examples of Rhetorical Heuristics

I will now present examples of rhetorical heuristics in three classical court speeches to indicate how they could appear as extended strategies in forensic arguments. Once again, it should be born in mind that rhetorical heuristics could only be understood fully as part of a detailed examination of the speech.[24] The heuristics presented below describe relatively simple cases. In reality, however, rhetorical heuristics can be followed through a long and intricate set of evidence and argument, and could be made up of several interrelated shorter arguments. In other cases a speech may involve a number of different heuristics which are either intertwined or one may be embedded in one another.

The first case provides an example of the combined use of the anchoring and adjustment and the replacement heuristics as a model for an argumentative strategy in Cicero's defence of Publius Cornelius Sulla. The rhetorical heuristic supports the probability of the orator's own evidence by a commonplace appeal to *auctoritas* or authority. P. Sulla, a wealthy descendant of the illustrious patrician *gens Cornelia*, nephew of L. Sulla, the dictator, and beneficiary of his uncle's proscriptions, was charged with participation in the alleged first and second conspiracy of Catiline in 66 and 63, under the *lex Plautia de vi*. Cicero undertook his defence most probably between May and October 62. He spoke after Quintus Hortensius, the second advocate in support of the defendant, and won the case.

In the introductory passages of the speech in 2–35, instead of concentrating on the defence of Sulla, Cicero embarks on a number of lengthy and seemingly irrelevant arguments in defence of his own *auctoritas*, authority.[25] L. Manlius Torquatus, the leader of the prosecution, accused Cicero of inconsistency in undertaking the defence of an alleged Catilinarian conspirator, while he himself poses as the suppressor of that conspiracy. According to classical rhetorical theory the arguments in 2–35 could be considered a series of digressions that consist mainly of *argumentum ex auctoritate* and argument from witness testimony.[26]

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[24] For a full analysis of the speeches see Tahin (2009).

[25] The argument is introduced quite unexpectedly and casually, ostensibly to counter Torquatus strategy to diminish Cicero's authority and thereby weaken the defence of the defendant. However, it can be read almost as an early *propositio* that sets out the main theme of the argument. 2 *Et quoniam L. Torquatus… existimavit, si nostram in accusatione sua necessitudinem familiaritatemque violasset, aliquid se de auctoritate meae defensionis posse detrahere, cum huius periculi propulsatione coniungam defensionem offici mei.* "And since Lucius Torquatus… thought that if he injured our friendship and close relationship in his accusation, then this way he could weaken my authority a little, I will connect the attempt of driving back the danger from this man with the defence of my conduct in official duty."

[26] Berry (Berry 1998) takes *digressio* in the sense of *Quint.* 4.3.9–17. …*frequenter utilis* (sc. est) *ante quaestionem praeparatio*… "a preparation (i.e. the digression) is often useful before the examination of the main issue" Quintilian seems to advocate here a rather flexible view on digressions, which can include every inessential, yet useful section of the speech (such as *indignatio*, expression of indignation, *miseratio*, appeal to pity, *invidia*, arousing ill will, *convicium*, abuse, *excusatio*, excuse, *conciliatio*,

However, if we follow the traditional rhetorical categories and take (with Berry and Quintilian) 2–35 as a series of digressions to prepare for the main body of the argument, such a view could fail to consider the fundamental importance of these arguments in providing a dominant support throughout the whole speech for the improbability of the charges against Sulla as an alleged conspirator. The passage sets out the major strategy of the speech focusing less on providing support against the allegations in 36–68 than on putting forward Cicero's persona both as political authority and as a witness to the events.

Taking into account the central role of Cicero's *auctoritas* as a proof of Sulla's innocence, one can clearly say that the introductory passages (together with 80–5) do not contain irrelevant arguments regarding the defence as a whole or what follows in the speech. Instead of setting the probability of Sulla's innocence as the central proposition of his argument, Cicero chose to focus on his own credibility, to show himself as one of those who know as insiders what happened during the suppression of the conspiracy. However, it is not enough to say that the passage based on *argumentum ex auctoritate* and argument from witness testimony simply replaces the proposition of Sulla's innocence with the problem of Cicero trustworthiness.[27]

One has to see the arguments in 2–35 and 80–5 in the context of the whole speech. It is important to understand that, whereas these arguments may appear irrelevant and relatively insignificant, they in fact form a comprehensive strategy that provides the dominant, if indirect, support for the improbability of the charges set out and refuted in detail in 36–68. Starting with a rather general self-justification (that is, one separated from the actual charges), i.e. 'anchoring' the problem of his trustworthiness in the jurors' mind, and at the same time 'replacing' the proposition of Sulla's innocence with that of his trustworthiness, the jury would also evaluate the case (adjust the following arguments, the answer to the charges) on the basis of how probable they found the defence of Cicero's consistency in taking up the case. Cicero achieved this by the intricate application of the 'replacement' and 'the anchoring and adjustment heuristic', a strategy that could completely confound the decision-makers about the nature of the forthcoming evidence.[28]

The second speech provides an example of the combined use of three different heuristics, the anchoring and adjustment, representativeness and economy of explanation in Cicero's defence of Sextus Roscius Amerinus. It is a case almost completely dependent on circumstantial evidence and argument from probability. The prosecution charged the young Sex. Roscius under the *lex Cornelia de sicariis*

et veneficis[29] with the murder of his father who was killed in Rome at the Pallacinae baths in 81, returning home late in the night from a banquet (18). No eyewitness seems to have been present at the scene, although Cicero suggests that the slaves of the murdered landowner could provide valuable information, if they were handed over to give evidence under torture (77–8; 119–20).

Cicero makes a tactical move, nowhere described in classical rhetorical literature. He takes the conclusion of the *argumentatio* out from its standard place after the *narratio*, and puts it at the very beginning of the speech after the initial appeal to the judges. He asserts that Chrysogonus, an influential freedman of the dictator Sulla, bought the estates of the deceased Sextus with the help of Roscius Magnus and Capito, two relatives of the murdered man[30] and alleging (without presenting any proof) that the trial was staged by those who benefited from the murder. Again, taking 1-8 as a Ciceronian innovation within the *dispositio*, arrangement, would not necessarily allow us to appreciate the argument as part of an overall strategy. That section of the speech provides a probable explanation for the crime[31] and conceals the almost complete lack of direct evidence by which to prove the innocence of the defendant.

Cicero can now pretend that he has already proved his case and that he does not need any further evidence. The forthcoming argument defends Sex. Roscius not against the charge of parricide, which is nevertheless treated as an important adjunct, but as a victim of proscription fraud. We need to realise the thesis switch, otherwise the whole *anticategoria*, attack against the prosecution, from 83 onwards becomes an excessive, irrelevant attack on Magnus, Capito and Chrysogonus, the suggested masterminds behind the charge, whose direct involvement in the murder has not been proved beyond doubt by the orator.

The anchoring and adjustment heuristic applied here establishes a substantial degree of probability in advance of the parricide charge. By the end of 36 the jury can form a probable opinion about whether they accept Cicero's case or not. In fact, if we look at the whole speech, the defence proper is shuffled between the initial heuristic probability from 1–36 and the *anticategoria*, counter-attack, that deals in detail with members of the conspiracy in 83–123. Putting the property sale and the *cui-bono* argument at the forefront, Cicero consciously sets an alternative argument that focuses the mind on probabilities which prove the innocence of Roscius in a

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[29] A rather interesting fact is that Cicero states the exact charge, *Occidisse patrem arguitur*, "he is accused of having killed his father", only at 37. It is not clear whether it is really a pedantic adherence to the rules of *dispositio*, as the major proposition in the argument, or there were other reasons to postpone the statement that far in the speech.

[30] 6 *Quae res ea est?* (i.e. that no senior advocate is willing to step forward to represent Roscius junior in the trial) *Bona patris huiusce Sex. Rosci, quae sunt sexagiens,… duobus milibus nummum sese dicit emisse adulescens vel potentissimus hoc tempore nostrae civitatis, L. Cornelius Chrysogonus.* "What is that matter?… Lucius Cornelius Chrysogonus, one of the most powerful young men of our city at this time, says he bought the properties of the father of this Sextus Roscius, which are worth six million sesterces, for two thousand sesterces…".

[31] Probably the most blatantly inadequate claim about the murder (which takes its support from Cicero's allegation at 6–7) appears in 17, where a simple narrative of the murder full of gaps is supposed to be enough to conclude that *spero ex hoc ipso non esse obscurum, ad quem suspicio malefici pertineat;* "I hope it is very clear from this fact on whom the suspicion of crime falls."

smarter way than direct defence. The anchoring and adjustment heuristic thus helps to clarify the exact nature of the argument on the illegal sale and the circumstances of the murder as the dominant, if highly dubious, proof for the likelihood of the defendant's innocence. Applying the traditional *exordium* and *narratio* scheme would not be able to reveal such a cohesion in the whole argument.

In all cases, but especially in that of Sex. Roscius and Chrysogonus, he frequently applies the argument that is a version of the 'representativeness' heuristic. He creates specific types of people, like the innocent countrymen or the evil scheming relative. The jury then is supposed to judge the probability of their guilt or innocence by assessing to what degree their *vita moresque*, life and morals, together with other circumstances would make them representative of a specific character.

In 37 Cicero advances an argument on the probability of Sex. Roscius' innocence, based on the 'representativeness' heuristic. That part is traditionally labelled as *probabile e vita* and *e causa*, an argument from probability based on someone's conduct or on the case itself. It draws its conclusions from a hypothetical inference which is presented in such a way as to cover all possible motives to commit a parricide. We find a neat division of character marks between inveterate criminals and avaricious but not necessarily guilty, citizens.[32] First, it is usually murderers who are likely to commit such crimes. The prosecutor admits that the defendant had had no such reputation. As for the vices caused by luxury, debt or unrestrained desires, farmers like Roscius tend to be free from such temptations, due to their specific, simple way of life. He is therefore unlikely to have ever conceived such a plan, let alone put it into action.

Similar arguments on the characters of Chrysogonus and Roscius Magnus, the alleged murderer, build up the representativeness heuristic in the speech. Again it is possible to apply traditional categories to such arguments one by one, e.g. the *probabile e vita*, but we may not be able to perceive how the different arguments from character form a consistent strategy to make up for the lack of conclusive direct evidence and disprove Roscius junior's involvement in the murder.

Instead of showing that Roscius junior could not reasonably have been the murderer, or even that Magnus could have been the likelier killer, Cicero argues from the fact that Chrysogonus became the owner of Roscius senior's estates that it is highly likely that the powerful freedman of Sulla staged the whole trial in order to get rid of a potentially troublesome claimant.

The collaboration of the three suspected criminals provides the basic probable proposition that explains the obscurities in both the murder and the trial. However weak the connection is between the events after the murder, and, consequently, low their likelihood, it provides a more extensive and forceful probability which could weigh far more than the probability of the murder charges. The conspiracy theory, therefore, becomes more credible not on account of its inherent probability, which is just as little as that of the murder charges, but because three separate puzzles can be

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[32] 39 *qui homo? adulescentulus corruptus …vetus videlicet sicarius, homo audax et saepe in caede versatus.*; *luxuries igitur hominem nimirum et aeris alieni magnitude et indomitae animi cupiditates ad hoc scelus impulerunt.* "What sort of person? a depraved young man… ? Clearly he is an experienced assassin, a daring man, and someone often engaged in murders?…So certainly luxury and the magnitude of his debts and his uncontrolled desires drove him to this wickedness?".

solved by one solution, which people would believe more willingly on the grounds of economy. That argument, which is nowhere described in rhetorical theory, I call the 'economy of explanation' heuristic. Together with the 'anchoring and adjustment' it provides an in-depth strategic analysis of the argument structure based on a host of effective but (to put it mildly) inconclusive proof from probability with which Cicero successfully won acquittal for Sex. Roscius.

The strategy of Lysias' sixteenth speech, also called In Defence of Mantitheos, can be regarded as one of the early examples of the heuristic[33] which we can label as the 'changing the issue'. It is used here to overcome the potentially disastrous effects of the direct evidence and public prejudice the defendant had to face. The speaker starts arguing about a case which seems to be a direct response to the opposing party. The main argument may not lack support from direct evidence but the speaker still finds it necessary to produce an auxiliary argument. That is often marginally relevant to the main argument, yet its stronger probability may make the final conclusion much more plausible. The point of the strategy is a gradual and almost unobservable move from the major to the auxiliary argument, while the latter is discussed in such an exclusive way that the major issue is left out of sight.

The case, which came before the Athenian *boule*, civic council, sometime between 393–89, belongs to Lysias' *dokimasia* (the procedure of examination for the qualification of public office) speeches. The young Mantitheos applied to become a member of the Council of the Five Hundred. He was drawn by lot and therefore had to appear before the members of the Council for a test on whether he can officially qualify for the post. It happened there that some members of the outgoing body opposed Mantitheos' appointment and charged him with service in the cavalry during the reign of the Thirty in 404–3. The prosecution could lean on a weighty direct evidence that Mantitheos' name appeared on the registry that listed those who served as cavalrymen during the Thirty.

In the speech Lysias is using a strategy that focuses first on the charge of being in the service of the Thirty that is supported by direct evidence. He counters that charge by two shorter arguments from probability. He says first in 4–5 that he was sent abroad by his father and only returned in the last five days of the Thirty, which makes it unlikely that he had actually been in their service. Second, he argues in 6–7 that the cavalry service register was more unreliable than the cavalry supply register, where his name does not appear, so again it is not likely that he was in real service.

The second part of his defence in 8–20 takes up a much longer space and comprises mostly the so-called *pistis ek biou* or proof from life. Here he gives evidence for his virtuousness by describing his character as a decent and honest citizen and the services he offered to the city. An important element of that section is the inclusion of relatively lengthy narrative proofs (e.g. 13–16) which stand in stark contrast with the very brief refutation of the direct evidence.

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[33] Cicero is very much fond of this type of heuristic, although he never uses it in such a plain form as Lysias. A good example in the Ciceronian corpus is the *Pro Cluentio*, where the major charge, the poisoning of the young Oppianicus, is presented by Cicero as an irrelevant accusation against his client compared with the prejudice created by the disgraceful *iudicium Iunianum*.

It is possible to argue that the first part of the speech is a classic *refutatio* based on *atekhnoi pisteis* (i.e. proofs not invented and applied by the orator in the speech but drawn from the available evidence), while the second, longer part consists again in direct evidence in the form of a narrative proof about the life of the defendant. Both of these sections in turn support a probable inference with the conclusion that it is unlikely that he served under the Thirty and that as a dutiful citizen he fully deserves to be the member of the Council. However, such a view may not fully bring out the essence of Lysias' strategic plan, namely that he gradually and almost unnoticeably turns the mind of the jury away from the not entirely convincing discussion of the crucial piece of evidence to proofs which may be marginal to the real issue, yet carry all the greater degree of probability of his suitability for office.

5 Conclusion

Rhetorical heuristics are the result of my theoretical approach in order to explain certain forms of argument which have not so far been treated as independent strategies. My purpose was to create an analytical method different from classical rhetoric that may reflect the actual practice better by bringing out a greater variety of strategies adapted to individual cases. Apart from cognitive heuristics, I relied to a great extent on analytic tools provided by informal logic to help mapping out the argument structure of a speech. A detailed description of sub-arguments, evidence, premises, fallacies and conclusions, together with the analysis of the extent to which the premises render the conclusion probable is essential to understand the strategic arrangement of arguments of a speech.

Rhetorical heuristics can help understanding not only argument strategies in classical oratory that have so far remained concealed, but they may also provide clues as to what level of performance was to be expected from an effective orator. A good speech could never simply rely on a mechanical application of rules and living up to common expectations about how an orator could and should present his argument. If the orator wanted to win a case, his argument had to present all probabilities that could be drawn from the available evidence in a form that would go beyond the expectations of the audience. Rhetorical heuristics can provide strong proof of how oratory at master level required complex innovation in an attempt to surprise the audience and outdo the opponents.

The use of probabilistic strategies also indicates that an orator had to have strategies to control all the contingent elements of a case. As forensic speeches from classical antiquity show, the available evidence was rarely enough to make the conclusion certain beyond reasonable doubt. In order to succeed the orator had to consider all the probabilities that could have appeared in his own or in the opponent's argument and in the minds of the audience and take them into account in a persuasive argument.[34] Rhetorical heuristics demonstrate strategies which the orators could use to bring the judges on their side with a probable and persuasive argument.

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[34] See note 23.

There are of course limitations to the concept as presented here, especially at this early stage of the research. I should emphasise two important points. First, the concept is still experimental, which means that the method of analysis could be developed further through the inclusion of a much larger body of speeches and results in related fields, such as the study of cognitive heuristics. However, the fundamental elements of the concept, that is the heuristics discovered so far, could be considered well-established by evidence from the speeches. Second, the present writing cannot give a comprehensive introduction to the notion and application of rhetorical heuristics, because a very detailed demonstration of the method on actual Greek and Latin speeches would not be practicable here.

Another problem arises concerning the available evidence on ancient oratory. We don't know a great deal about the actual practice of Greek and Roman oratory, so it is not possible to tell to what extent the strategies described in these speeches were widespread. One may argue that focusing on only a small number of Ciceronian (and Greek) speeches could raise doubts about the general applicability of the concept. However, I never claimed that rhetorical heuristics could or should be universally applicable to every type of argument in ancient oratory. Moreover, my aim was to demonstrate a type of argumentative analysis through the detailed discussion of individual cases. The success of the concept therefore depends on the practicability of the method in individual cases and not on whether it was tested on all the available Greek and Roman rhetorical material. The scope of the method is an important question, but I cannot reflect on it here.

Someone may also rightly raise the question that, if such strategies are considered so important, how it is possible that no ancient orator or rhetorician ever mentioned or discussed heuristics as specific devices of persuasion. To answer this question I should state that I do not claim that Cicero, or any other ancient orator, had a theoretically explicit awareness of using rhetorical heuristics. However, such an assumption is not necessary to maintain that such strategies existed. Just as speakers of a particular language can use intricate grammatical or stylistic structures without being able to give a technical description of such constructions, there is no need to assume that orators had to be able to give an explicit description of complex strategies in order to use them in their arguments.

It is also possible to say that ancient rhetoricians were not able to describe rhetorical heuristics simply because the categories of the system they used only allowed them a different view of the devices of persuasion. To assume that rhetorical heuristics, if they really exist, should have appeared in some form of classical rhetoric would also entail that these systems are to be regarded as the ultimate resource of every possible means of persuasion found in ancient oratory. As modern studies on ancient rhetoric (e.g. Stroh, Classen) showed, this is far from being the case. Also, the fact that previously undetected strategies in support of the probability of the conclusion seem to exist shows that orators were capable of using argument schemes that were not discussed by theoretical treatises but originated from practice.[35] The complexity of such strategies at least suggests that they could

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[35] That assumption is nevertheless supported by Quintilian. He argues in the end of the fifth book of his rhetorical *opus* that orators had already created different types of arguments before rhetoricians collected

have been learnt and used through reading speeches or observing existing practice.[36]

The theoretical discussions in the study and the analysis of three heuristics could finally raise an important question about the applicability of the concept in the present time. As I said earlier, the level of rhetorical handbooks in classical times would not necessarily have enabled an aspiring orator to create complex arguments in forensic practice. To improve his art (and his chances of success) he needed to proceed further and observe how different argumentative strategies worked in practice for others in different rhetorical situations. Applying these and developing them further could make him obtain mastery in oratory.

If that process existed in classical oratory, one may naturally ask whether classical speeches that were preserved in writing could offer similar experience to those who undertake a detailed study of them. Assuming that classical speeches may not solely be the object of historical or literary research, we may give an affirmative answer to that question. The modern scholar will not have the same experience as those who listened to the speech and will therefore miss a number of clues about the rhetorical situation in its entirety. However, he will have the opportunity to analyse the speech with its evidence and arguments in minute detail repeatedly, which was not possible for the listeners at the time.

The analysis is nevertheless only the beginning of developing a more systematic approach to rhetorical heuristics. I can take this idea one step further and argue that the study of contemporary forensic and political speeches, inasmuch as they argue about questions of fact, may also provide models for heuristic strategies. In that way rhetorical heuristics could be used as a tool for analysing a class of modern rhetorical discourses and also as a collection of strategies to help produce persuasive arguments. The most important question with regards to that task is how I can set out to study rhetorical heuristics.

Answering this question in every detail would require a detailed, book-length introduction to the concept and uses of heuristics. Nevertheless, I could give a few preliminary advice on what subjects are required to start such a work. I should distinguish between two major areas of studying heuristics, theoretical considerations and the use of argumentative material. Most importantly, one should gain experience in analysing a wide variety of inductive arguments (e.g. forensic,

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Footnote 35 continued

them for educational purposes. That statement, if true, seems to indicate that orators used strategies before these were compiled by teachers of rhetoric. Quint. *Inst. Or.* 5.10.120 *Neque enim artibus editis factum est ut argumenta inueniremus, sed dicta sunt omnia antequam praeciperentur, mox ea scriptores observata et collecta ediderunt. Cuius rei probatio est quod exemplis eorum ueteribus utuntur et ab oratoribus illa repetunt, ipsi nullum nouum et quod dictum non sit inueniunt.* "For the arguments were discovered not as a result of the publication of handbooks, but every argument (i.e. that is described in the handbooks) had already been presented before any rules were taught, and then writers of rhetoric observed them and published them in a collection. A proof of this is the fact that they use old examples and they take those from the orators, while they themselves discover nothing new or anything that had not been said before."

[36] The most important and intricate examples of these strategies are the so-called *eikos*-arguments in early Greek oratory, especially in Antiphon's Tetralogies and Gorgias' Palamedes. Although these arguments are derived from probability and show a high level of complexity, I do not regard them as fully developed rhetorical heuristics as they were not intended for actual audience. (Gagarin 1984, 1997; Kraus 2007).

political or advertising) with the help of informal logic and probability theory. A good working knowledge of classical rhetoric may also be important to be able to follow and understand lengthy arguments in their entire complexity.

An understanding of how cognitive heuristics may affect common forms of everyday reasoning should enable the student to see how rhetorical heuristics attempt to model cognitive processes in argumentative discourses. These fields may seem the fundamental areas for a thorough understanding of rhetorical heuristics, yet other subjects may also help the discovery and construction of probabilistic strategies. For example, I assume (without having proven it through practical examples) that knowing formalised methods of solving mathematical problems could also contribute to the identification of rhetorical heuristics.

Of course, the theoretical background is just one prerequisite of finding and using rhetorical heuristics. A thorough knowledge of the argumentative material is also expected in order to see how rhetorical heuristics may work in actual cases. With this requirement we have come back to the three examples of rhetorical heuristics presented in this study. They show clearly that to perceive the essence of any heuristic strategy historical or modern argumentative texts should be viewed in as full length and context as possible. Only that way would someone be able to observe what probable inferences could be drawn from the available evidence pro and contra and what other probabilities had to be taken into account by the orator in order to achieve a successful approval of his conclusions.

These suggestions on the use of rhetoric heuristics make it clear that one of the primary fields of application for the method is the argumentative analysis of classical or modern speeches based on probabilistic reasoning. However, just like in the case of classical rhetoric, the scholarly use of the method can be transferred to the area of education, in particular, where students need to learn advanced forms of rhetorical arguments. To achieve that goal they should be taught to identify and apply independently heuristic strategies that could be applied successfully when complex argumentation is to be presented before an audience with no specialist scientific or other kind of knowledge. Naturally, these areas can be extended to include other practical fields in the humanities or social sciences, where probability and (rational) argumentation are put in the service of persuasion.

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