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Differences Between Argumentative and Rhetorical Space

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ARGUMENTATIVE SPACE: LOGICAL AND RHETORICAL APPROACHES

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Abstract:

The issue I address in this paper is the age-old problem of the relationship between logic and rhetoric. More specifically, I ask the question, how do logic and rhetoric differ in their approaches to the study of argumentation? What makes this question timely are the changes that logic has undergone in the last 25 years. In this paper, I develop the idea that an argument is the central event in what I call argumentative space. I present a conception of argumentative space as a subspace within rational space and seek to provide a rough characterization of the main features of argumentative space as understood, on the one hand, by informal logic and, on the other hand, by rhetoric.

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1. Introduction

The relationship between logic and rhetoric is an old theme, full of traps and pitfalls and obstacles, quite certain to bring out the writer's prejudices and assumptions and misconceptions, and likely to give us all an opportunity to examine our favourite stereotypes.[1] Hence, an appropriate topic for a conference devoted to the theme of argumentation and rhetoric.

Both logic and rhetoric trace their provenance to Aristotle, both have had long and complex histories, both are concerned with the practice of argumentation, and both have undergone important transformations in the latter half of 20th century. To mention only two such which have special relevance to this conference, in rhetoric we have the New Rhetoric (Perelman) and in logic, the development of informal logic.

The premise of this paper is that it's time once again to ask this question. I begin in the next section by presenting conceptions of logic and rhetoric that reflect some of the important changes that have taken place particularly in the wake of the work of Perelman, Hamblin and Toulmin. In Section III, I introduce the notion of argumentative space as a metaphor to illustrate how informal logic understands the practice of argumentation. That will set the stage for Section IV where I discuss differences between how informal logic and rhetoric understand argumentative space. Section V is my conclusion.

2. Logic & Rhetoric: Informal Logic and The New Rhetoric

2.1 Introduction

To begin, then, by logic, I understand the inquiry into or the study of the norms for good reasoning.[2] There are

many logics. As I draw the map, formal deductive logic (FDL) is concerned with deductive and implicative relationships (entailment, for example); inductive logic with inference; abductive logic with explanation; and informal logic with argumentation. In each case by "is concerned with" I mean "seeks to provide the appropriate norms for."

2.2 Informal Logic

Informal logic still suffers the fate of being widely misunderstood. To many, the term means something like applied formal logic, while for others it still calls to mind Ryle's view of informal logic as the logic of substantive concepts.3 However, I believe neither of these really captures what the effort is about. Informal logic is the attempt to reclaim the practice of argumentation as a fit subject for logical investigation. (How argumentation got displaced makes for an interesting story, which I do not have time to go into here.)

An obvious point is that "informal" must derive its meaning by way of contrast to its counterpart-"formal." Here it is helpful to have recourse to Barth and Krabbe (1982: 14 ff.) who distinguish three senses of the term "form."4 By "form1," Barth and Krabbe mean the sense of the term which stems from the Platonic idea of form as the ultimate metaphysical unit. Barth and Krabbe claim that most traditional logic is formal in this sense (i.e., syllogistic logic).

By "form2," Barth and Krabbe mean the form of a statement as understood in modern logic. When we say that the syntax of the language to which a statement belongs is precisely formulated or "formalized," we are referring to this sense. The best known and most powerful systems of logic (those that stem from the Frege and Russell-Whitehead initiatives) are formal2. It is in this sense that informal logic is "informal"—because it abandons the notions of logical form and validity as regulative ideals for arguments.

By "form3," Barth and Krabbe mean to refer to "procedures which are somehow regulated or regimented, which take place according to some set of rules." In this sense, informal logic can be formal. There is nothing in the informal logic enterprise that stands opposed to the idea that argumentative discourse should be seen as subject to norms, i.e., subject to rules, criteria, standards or procedures. What is denied is that the criteria for evaluating arguments are to be obtained by reflection on the logical form2 of the involved statements.

Having said what informal logic is not and invoked the Barth-Krabbe distinction, let me now say what (I think) it is. By "informal logic," I mean to designate a branch of logic whose task is to develop non-formal standards, criteria, procedures for the analysis, interpretation, evaluation, critical and construction of argumentation in everyday discourse" (Johnson and Blair, 1987:148). (I am just a little uncomfortable with the restriction there to "everyday discourse" because I believe informal logic can also cast light on what Weinstein has called "stylized argumentation.")5

2.3 Rhetoric

Here, knowing much less, I can be briefer. The discipline of rhetoric goes back to Aristotle (as does logic, though not under that name) and what distinguished rhetoric from Analytics as they first emerge is that rhetoric is focused on a different kind of argumentation. Analytics focuses on certainty achieved in demonstration; dialectics on probability; and rhetoric on persuasiveness.

One could argue that the current revitalization of rhetoric began with the publication of *The New Rhetoric* in which Perelman attempts to secure a new mandate for rhetoric by distinguishing its concerns from those of

FDL.6 Perelman is rebelling against the Cartesian notions of truth and self-evidence as well as the influence of mathematical logic.

Rhetoric is now widely conceived as the study of *effective communication*. Since one prominent form of communication is argumentation, rhetoric has an interest in the study of argumentation. In the post-Perelmanian landscape, rhetoric has come to focus on argumentation which aims at persuading its audience as opposed to the type of deductive demonstration Perelman considers characteristic of logic.

2.4 The Relationship between Informal Logic and Rhetoric

The spectre of Formal Deductive Logic still hangs over this discussion in the view (still adhered to by many in both rhetoric and communication theory) that logic's approach to argumentation is bound up with *a priori* and formalistic procedures and conceptions that emphasize conclusive arguments as the ideal.7 Many informal logicians have attempted to redirect logic away from the deductive sequences of propositions that were the focus of FDL and to refocus it on real-life argumentation where an argument need only be good enough.

In this effort, informal logic has been significantly influenced in its development by the work the rhetoricians and speech communication theorists. You can see this influence in a number of developments: the role that informal logicians have assigned to audience,8 the awareness of the importance of context, for example in the way in which informal logicians have dealt with the "ad-" fallacies (Walton, Brinton, and Wreen) exploring the view that the fallacies are not always fallacies, that it is not always fallacious to attack the person, to appeal to emotions etc. In particular, you can see this influence in an important shift that occurs in the theory of evaluation. Under the influence of theorists like Perelman and Hamblin, informal logicians dropped the truth-requirement (which many had brought with them from their earlier exposure to formal logic) and substituted acceptability. Something like the relevance/sufficiency/acceptability triad that first appears in Johnson and Blair's *Logical Self-Defense* (1977) has become fairly standard among informal logicians by the 80s.9 (I will later argue for the view that this was a mistake and that informal logic must position itself between rhetoric and Formal Deductive logic in this matter of premise-adequacy.)

Thus, it is clear that informal logic has benefitted in being more open to rhetorical considerations than FDL.10 Some have said that there is really very little difference between the two.11

2.5 Posing the Question

If we now pose the question concerning the relationship of logic and rhetoric, we cannot content ourselves with the many traditional accounts which were premised on the belief that logic approaches argumentation through the lens of truth and/or validity. (Some answered this question by developing the notion of rhetorical validity in order to contrast it with logical validity.) Yet for all the rapprochement, differences still remain. What are these differences?

I want to explore this question using the metaphor (or construct) that I call argumentative space.12 We may say that to engage in the practice of argumentation is to enter argumentative space. What then are the characteristic features of argumentative space as understood by informal logic?13 My hypothesis is that informal logic and rhetoric see this space in different ways, define it somewhat differently. That is the hypothesis I explore in what follows.14

3. Informal Logic, Argumentation, and Argumentative Space

3.1 Introduction

I believe that both logic and rhetoric can agree to the following: Argumentation is the socio-cultural practice of constructing, presenting, and criticizing and revising arguments.[15] At the core of the practice is *the process of arguing*—a specific type of interchange between two or more participants. In the typical interchange, there is a difference in point of view that has crystallized around some issue (I), and one of the participants (the arguer) is attempting to persuade the other of the truth[16] of the thesis (T). An argument may be viewed as the distillate of this process, *the product* which emerges from it, whether in writing or in speech.[17] The process of arguing is the central event in argumentative space. The argument is the central site or location where this process takes place. I now seek a characterization of that space which will help us to differentiate between logic and rhetoric.

3.2 Argumentative Space as Teleological

Both logic and rhetoric describe argumentative space as a teleological space, which is to say that both understand this space as purposive. But they understand that purpose differently.

In my view, the primary purpose of entering into argumentative space as this is understood by logic is *rational persuasion*.[18] That is, the arguer seeks to persuade the other of the truth of some thesis, T, and to get the other to accept T using only rational means: reasons, evidence, grounds, objections and replies, counterarguments and so forth.

In argumentative space, emphasis is, appropriately, on the achieving of this end by *rational means*. Other methods of achieving persuasion exist and have their uses: propaganda, advertising, op-ed columns, political speeches etc. There are indeed other methods of achieving rational persuasion, such as the practice of making decisions by majority rule.[19] What characterizes the practice of argumentation as understood by informal logic is that the *telos* is not to produce consensus or reach closure no matter what, but rather to achieve a consensus in which the parties agree that the force of the better reasoning, and that alone, has determined the outcome.

This teleological aspect of argumentative space is intimately connected to the next feature I want to discuss: its dialectical nature.

3.3 Argumentative Space as Dialectical

Argumentative space is a dialectical space.[20] Because the practice of argumentation exists in order to achieve rational persuasion of the other as a rational agent, the practice must also be dialectical. To say that is to say what everyone knows, yet I believe that the force of this all-too-familiar characterization has not been fully appreciated.

The root meaning of "dialectical" is dialogue—a logos that is *between* two (or more) people. That requires more than just speech between two parties, because such talking may be nothing more than a monologue conducted in the presence of another. Genuine dialogue requires not merely the presence of the other, but as well the real possibility that the logos of the other will shape one's own logos. An exchange is dialectical when, as a result of the intervention of the other, there is the potential that one's own "logos" (discourse/reasoning/thinking) will be affected in some way. There is an open and active feedback loop. Thus far, I believe, both logic and rhetoric are in agreement.

Let us now consider the influence this feature of argumentative space has on the nature of and the structure of argument, when this structure is viewed as a means of achieving rational persuasion. Participants in the practice recognize that any claim made in argumentative space must be supported by reasons, or evidence of some sort. (Reasons and evidence are not necessarily the same-evidence could include physical objects, studies and such.) Hence in the first instance argument appears as a premise-conclusion structure, what Blair has called the illative core of the argument.[21]

If we take seriously the idea that argument takes its structure from its purpose of rational persuasion, then a second tier will be needed. Why? The practice of argumentation presupposes a background of controversy. The first tier (the illative core) is meant to initiate the process of converting the Other(s), winning them over to the arguer's position. *But they will not easily be won over, nor should they be, if they are rational.* For the participants will very likely be aware of objections, criticisms and alternative views—the dialectical material that has gathered as it were about this particular location in argumentative space.

Indeed, the arguer must also be aware of this, as I shall call it, dialectical stuff that has accumulated around this issue. It is typical, especially if we look to the *best practices*, that the arguer attempts to defuse such objections within the course of her argument, and/or respond to criticisms, and/or deal with alternative positions and counterarguments about the issue. If she does not deal with the objections and criticisms, then to that degree her argument is not going to satisfy the requirements of rationality. For those at whom it is directed, "those who know" about The Issue will be aware that the argument is open to objections from those who disagree with its reasons and/or conclusion and/or reasoning. Hence, if the arguer wishes to persuade the other rationally, the arguer is under an obligation to take account of these objections, these opposing points of view. To ignore them, not to mention them, or to suppress them—these could hardly be considered the moves of someone engaged in rational persuasion.[22] Hence an argument must have a second-dialectical-tier in which objections and criticisms are dealt with.

3.4 Argumentative Space and Manifest Rationality

If we take seriously the *telos* of rational persuasion and as well the dialectical structure necessitated by this *telos*, then we will see that, from the perspective of logic, the events and locations in argumentative space are governed by the requirement that I call manifest rationality.

By the phrase "*manifest rationality*," I mean not just that the practice is rational, but that in addition those engaged in it have a mutual, if tacit, understanding that rationality should be manifest: that it should characterize both substance and appearance, should show up not just as the inner reality but also the outward appearance of the practice. We may borrow an analogy from the justice system (legal space if you will) where we find a similar requirement that not only must justice be done, it must be seen to be done. Even the appearance of something that would compromise justice is therefore prohibited. A judge might be perfectly capable of delivering a fair and impartial verdict in a proceeding involving a member of his family, but if he were to do so, the appearance of justice would be compromised. Arguers are under a similar constraint in argumentative space, where rationality must not only be done, but it must be seen to be done, and where anything that compromises the appearance of rationality must be avoided. This coalescence of the substance and appearance of rationality which I term manifest rationality is, in my view, a defining feature of this space.[23]

What it is for an argument to be rational is clear. Its content and structure are dictated by the aim of rational persuasion, so that all other methods of achieving that persuasion are *verboten* in argumentative space. What is it for an argument to appear rational, to have the look of rationality? Well, I want to say that its rationality must be

apparent. The reasons that form the illative core are clearly present; and in addition, the arguer acknowledges his dialectical obligations by constructing what I have called the dialectical tier. An argument that does not have a dialectical tier will lack both the substance and the appearance of rationality. And hence fails to satisfy the requirement of manifest rationality.

Perhaps I can further illustrate by contrasting argumentation with advertising in which we will often find the appearance of rationality (here are five reasons why you should buy my product, and never mind my competitors claims about better mileage because that's only ....) but is missing the substance of it. For at its core an advertisement is not—in my view—committed to achieving rational persuasion. Suppose then that these are significant features of argumentative space as understood by informal logic. I want to suggest they lead to three points of differentiation.

4. Logic and Rhetoric: Some Differences

4.1 First Difference: The Teleological Nature of the Space

In assigning to argumentation the *telos* of rational persuasion, we have located argumentative space within rational space. From the point of view of logic, argumentative space appears as a sub-space of Rational Space, by which I understand that space in which occur those intellectual endeavours in which rationality rules, or in which rules of rationality are acknowledged as having priority in determining outcomes in that space.24

Both logic and rhetoric see argumentative space as governed by rationality. Rhetoric sees the shaping of the argument as rational, for the arguer must use Logos (reason and reasons) to develop the argument. But from the point of view of rhetoric, the rational force of the argument is not and should not be the only factor in determining outcomes in argumentative space. There is also the need to take into account the role of Ethos and Pathos. To be effective, rhetoric will insist that the argument takes account of the human environment and that it as well connected with human sentiment.

That brings us to the first difference. Both logic and rhetoric are concerned with persuasion by means of argument. But rhetoric is pre-eminently concerned with argumentation as *effective persuasion,* whereas logic is concerned with *rational persuasion*.25

1st difference:
Rhetoric sees argumentation as a route to *effective persuasion,* whereas logic sees argumentation as a path *to rational persuasion*.

4.2 Second Difference: The Structure of Argument-The Dialectical Tier

I have argued that the telos of rational persuasion has consequences for how logic depicts the structure of argument: a dialectical tier is required. Does the *telos* of effective persuasion have the same impact on the structure of argument as understood by rhetoric? My answer is "No." Rhetoric will not generally require a dialectical tier in the argument. That is, if the arguer can achieve the end-effective argument—with only what I have called the illative core, then the interest of rhetoric will have been satisfied. It will require this tier only when it is necessary in order for the argumentation to be effective (persuasive) for a given audience. Thus, for example, when the arguer can anticipate that some member of the audience will raise a certain objection, it makes sense

for the arguer to anticipate and indicate how he will handle that objection.

But this is not generally the case. Suppose that there is an objection, let us call it O*, which the arguer knows about and which the arguer also has very good reason to believe his audience does not know about. We may suppose for example the arguer is the editor of a journal that has just received a paper for publication in which this objection is raised; and we suppose that the arguer knows that the author of the paper is not in the audience. From the point of view of rhetoric, there is no obligation for the arguer to deal with O*-his argument can be perfectly effective without it. However, from the standpoint of logic, the arguer is under an obligation to deal with this objection, even if, and especially if, doing so could potentially influence the rationality of the argument. Because even though the audience does not know of the objection, and so the arguer could "get by" without dealing with it, his argument will be more rational in substance and appearance, if it can meet the test of this objection. If this objection should create difficulties for the arguer, then he is all the more obligated to deal with the objection.

Further, the requirement of manifest rationality explains why in argumentative space as seen by logic, the arguer must respond even to those criticisms he believes (or knows) are misguided. If the arguer were obligated only by the dictates of rationality (rather than those of manifest rationality), then she can well afford to ignore the criticism. From the standpoint of rhetoric, the arguer is only obligated to respond to the misguided criticism if the doing so is necessary in order to achieve the goal of effective persuasion. But from the perspective of logic and the requirement of manifest rationality, the arguer is obligated to respond even to those criticisms which he regards as misguided, because to ignore such criticisms compromises the appearance of rationality.

Thus we have come upon a second difference in how their respective *teloi* influence the structure of argument. From the perspective of Logic, the obligation to deal with dialectical stuff is unconditional; a dialectical tier is required.26 From the perspective of rhetoric the obligation is conditional.

2nd difference:
Rhetoric requires only the illative core; logic requires as well the dialectical tier.

4.3 A Third Difference: Criteria for Evaluation

I believe that there is a third difference that derives from the different ways in which logic and rhetoric consider the task of the evaluation of arguments.

The issue is premise-adequacy. Many informal logicians have adopted acceptability as a criterion for premise-adequacy.27 In dropping the truth-requirement, and introducing the acceptability-requirement, informal logicians have—so I believe—been persuaded by rhetorical values and concerns.28

My position is that a viable theory of evaluation must include both truth and acceptability. Why do I think that truth should be included? My argument here must of course include a dialectical tier in which I deal with Hamblin's arguments against alethic criteria, but in the interest of time I shall bypass those here. What are my reasons for wanting to include truth?

Put most simply, the case for the truth-requirement is that it is hard for me to imagine doing the work of argument evaluation without some recourse, whether explicit or implicit, to this standard.

First, the notion of truth is presupposed in much of the vocabulary we want to have available when we evaluate arguments. Though I am not myself a big fan of validity as a criterion, it does seem clear that any standard unpacking of this notion will have to make some reference to truth. The same is true for terms like consistency, contradictory, relevance, presupposition and so on.

Second, we typically use this term to evaluate statements in ordinary discourse. We say things like "But that is just not true." It seems odd, even paradoxical, to believe that something strange happens to statements when they move into argumentative space, that something strange being that they can no longer be evaluated along the lines of truth.

I am not arguing for a return to FDL and its requirement that the premises must all be true in order for an argument to be a good one. I am arguing for the more limited doctrine that truth should be included among the criteria that we use when we evaluate argumentation. The tough work that remains to be done is to show how a theory of evaluation can embrace both truth and acceptability.29

3rd difference:
Logic requires, rhetoric does not, that the premises of an argument satisfy the truth-requirement.

5. Conclusion

In this paper, I have dealt with the age-old question of the relationship between logic and rhetoric. I have addressed it from the perspective of informal logic, which I especially connect with the practice of argumentation and which I see as interested in the normative issues surrounding that practice. I have sought to contrast the way in which logic and rhetoric see argumentative space and have turned up three differences:

(1) Logic sees argumentative space in terms of the *telos* of rational persuasion, whereas rhetoric sees defined rather by the *telos* of effective communication;

(2) Logic requires, rhetoric does not, a dialectical tier in the argumentation, in which the arguer discharges the dialectical obligations that have accumulated.

(3) Logic requires, rhetoric does not, some reference to a truth-criterion in its theory of evaluation.

Now the issue is not which of these disciplines has the right view of argumentative space. In emphasizing the *telos* of effective persuasion when they explore argumentative space, rhetoricians are performing a vital service. By the same token in emphasizing the telos of rational persuasion, the informal logician is also performing a vital service. Argumentative space is broad enough and important enough to want depicting by both, to allow for both forms, and much else that I have not talked of here.

Notes

1. No doubt in having this discussion we shall have to confront the old stereotypes that logicians have of rhetoric as interested in achieving persuasion at any price-something like the Academy's version of the used car salesman/person—and also the stereotypes that rhetoricians have of logicians as Spock—like creatures smitten with naive (formalistic) views of the nature of human rationality.

2. By "reasoning," I understand the process of looking for and giving and accepting reasons.

3. See Ryle (1954). Ryle calls this logic "informal" because of his belief that only nonformal procedures will reveal this logic. In other words, while formal logic can handle the entailment relationships that surround conjunction and implication, it cannot handle those for *time* and *pleasure*.

4. See Barth and Krabbe (1982).

5. See Weinstein (1990).

6. I recommend Ray D. Dearin's fine paper, "Perelman's Concept of 'Quasi-Logical' Argument: A Critical Elaboration," in Cox and Willard (1982) from which I have learned much.

7. Dearin for instance writes: "Beyond this broadened view of rhetorical rationality as encompassing the notions of validity and truth, another area highlighted by Perelman's treatment of those quasi-logical techniques is the role of the audience generally in the process of argumentation. 'Rhetoric,' as Robert Feys follows Perelman in pointing out, 'differs from logic in that it is occupied not with abstract, categorical or hypothetical truth, but with adhesion'" (1961, 12)."

8. See Blair and Johnson's (1987) notion of the community of ideal interlocutors, a derivation from Perelman's notion of the universal audience).

9. Govier (1985) changes sufficiency to adequacy. The same criteria are used by Damer (1987), Freeman (1989), Little, Groarke and Tindale (1989), Barry (1990) and Seech (1992). (References here are to first editions only.)

10. See Johnson and Blair (1993).

11. McPeck would say that; McPeck does say that (1981).

12. I find this construct extremely useful in teaching students about the practice of argumentation.

13. I am cognizant that the claims I make here on behalf of informal logic are somewhat idiosyncratic, certainly controversial.

14. I take very seriously Wenzel's position on the relationship between logic and rhetoric as presented in "Three Perspectives on Argument" (1990) and believe that what I have to say here is congruent with his views. Where we may differ is on the question of how much of the mandate of dialectic gets absorbed into informal logic.

15. Thus, my understanding of practice is quite close to MacIntyre's in *After Virtue* (1981):

> By a "practice," I am going to mean any coherent and complex form of socially established cooperative human activity through which goods internal to that form of activity area realized in the course of trying to achieve those standards of excellence which are appropriate to, and partially definitive of, that form of activity, with the result that human powers to achieve excellence, and

human conceptions of the ends and goods involved, are systematically extended. (p. 175)

This activity can not be understood as the activity of any individual or group of individuals, but rather must be understand within the network of customs, habits and activities of the broader society which gives birth to it, which continues to maintain it and which the practice serves. The activity under discussion here is of course the activity of constructing and responding to arguments. The goods internal to that activity are generally an increase in rationality and specifically a deeper understanding, being rationally persuaded, and coming closer to an acceptable position. The important question that needs to be dealt with is: what are the standards of excellence that are definitive of this activity?

16. If this notion of truth is troublesome, then substitute something you prefer: "the best possible position," or "the most rational position" or "a deeper understanding of the issue."

17. See O'Keefe (1977, 1982) on the distinction between argument1 and argument2.

18. I do not intend a distinction between persuasion and conviction, at least not along Perelmanian lines.

Some would object to the idea that there is such a thing as *the* telos or purpose of argumentation, pointing out that argument can also be used to inquire (Meiland, 1979), Johnson and Blair (1993)—and indeed other purposes, such as reinforcement of belief, clarification (Brandon, 1994) and even to entertain.

My response is that while argumentation may be used for these other purposes, these uses are best understood as derivative, as dependent on the use of argument for rational persuasion. For example, the use of argumentation for inquiry (which may be described as self-persuasion) is dependent on argument as persuasion: we first learn the practice of persuading others; then we can use that practice to inquire, i.e., to persuade ourselves. Just as one might argue that we first learn to talk to others and then learn to talk to ourselves, I would claim that in the first instance argumentation serves the purpose of rational persuasion. First we learn how to persuade others, and then learn how to persuade ourselves [argumentation as inquiry]. In other words, the public precedes the private, here in the practice of argumentation as elsewhere in language, if Wittgenstein's views are right.

19. The verdict of the majority shall stand as the verdict of the whole. This is certainly efficient and in that sense rational.

20. Shortly this feature will help us to differentiate argument from implication and inference. The notion of a dialectical space is somewhat akin to Barth's notion of a dialectical field (Barth, 1987).

21. See Blair (1995).

22. Though they might occur in the case of someone aiming to persuade, full stop.

23. See my (1996) 108-09 for a fuller discussion. The notin of manifest rationality allows for a lucid contrast between argumentation as a practice to achieve persuasion and advertising. In advertising, we have the appearance of rationality but not the substance. That is to say the outcomes that advertising seeks look rational (a consumer decides to buy this product for these reasons) and yet we know that beneath the surface the

mechanisms that govern this outcome are mostly emotional and psychological appeals.

24. For example, problem solving is an activity that occurs in rational space. A problem is defined, solutions are proposed, and the merits of the solutions are weighed in terms of their capacity to solve the problem (and, of course, other things such as their implications and consequences). In this activity, those involved do not consult other factors, such as how much they may like or dislike the proposer of the solution, nor yet how well written is the prose in which the solution is presented. Even things which ordinarily might be taken into account, such as the motivation behind the proposed solution—these do not really matter in rational space. In my view, much of science can be seen as problem solving—an activity that occurs in rational space. The same is true of mathematics.

Having mentioned rules of rationality, I will be asked what these rules are. I can only say that these rules are determined by the particular area of rational space that the endeavour or inquiry occurs within. The rules that apply in solving a mathematical problem are different from those which one must abide by in physics and so on. Each discipline, and perhaps each sub-discipline, may be said to have such rules and procedures.

Now I must add two disclaimers. First, there are aspects to the task of problem solving that transcend the reasoning and rational dimensions. In order to solve problems the individual must not only have mastered certain intellectual processes and standards, but must also possess certain character traits, like tenacity. And the individual must have the appropriate background: information and background knowledge. Second, much occurs within the these disciplines that is not mandated by these rules and methods. The space is not a perfectly rational space.

25. "We believe the paradigm case of rhetoric is the use of the spoken word to persuade an audience" Foss, Foss, and Tramp, p. 11. Wenzel uses the distinction between logic, rhetoric and dialectic to make roughly the same point: "From the standpoint of rhetoric, a good argument is an *effective* one; from the standpoint of logic, it is a *sound* one; and from the standpoint of dialectic it is a candid and critical interchange" (Cox and Willard, 1982: 93).

26. How to characterize or specify the contents of this dialectical tier is a problem which I call The Specification Problem.

27. See note 9 above.

28. Hamblin (1970, Chapter 6) persuaded many informal logicians that acceptability (or something like it) was a more appropriate criterion for the evaluation of arguments that was truth. See my (1991).

29. I refer to this as The Integration Problem. I believe that I have a solution to that problem, but presenting it would take us beyond the scope and time allotted.

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