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NEW RHETORIC MEETS NEW DIALECTICS: A METHODOLOGICAL INTERACTION
ON MUSIC AND COMPUTATIONAL CREATIVITY

by

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My thesis considers the use of argumentation in two distinct traditions: rhetoric and dialectics. I apply Chaim Perelman and Lucie Olbrechts-Tyteca's New Rhetoric and Douglas Walton's New Dialectics in a rhetorical analysis of David Cope's *Virtual Music: Computer Synthesis of Musical Style*. The book contains an exchange between composer David Cope, and cognitive scientist Douglas Hofstadter, about the implications resulting from Cope's compositional computer program: Experiments in Musical Intelligence (EMI). I apply Perelman and Olbrechts-Tyteca's concept of arguments of association and disassociation to analyze and categorize Cope and Hofstadter's arguments regarding the concepts of creativity, style, and imitation. I use Walton's concept of types of dialogue, and chains of presumptive reasoning to describe the internal structure of each argument and the overall contextual influence of the exchange. Ultimately, I address how these two frameworks interact and synthesize a new, unique model of argumentation.
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Introduction

Modern argumentation theory has surpassed its logical, structural roots to encompass informal and contextual aspects of arguments. In the process, such theories often reveal more about the story of the context beyond what is merely argued. No argument exists in a vacuum, and no argumentative situation consists solely of premises, inferences, and conclusions. Each situation contains a variety of participants, intentions, goals, methods of reasoning, and elements of the rhetorical situation that both shape the arguments, as well as are sometimes discussed and influenced in the argumentative process. Modern argumentation theory continues to address and analyze these elements.

In a similar vein, no theory of argument can exist in a vacuum. All theories are born out of particular academic conversations. Such theories often extend old conversations and contribute to new ones. Old theories and concepts influence new theories and concepts which in turn affect the old. Often, the end result is a new discovery or interpretation of not just about the conceptual idea of arguments, but also about the practical, sometimes everyday story they encompass. When ideas and theories "talk" to each other within these academic conversations, new insights into the theoretical and practical are gained.

My purpose for my thesis is to analyze and discuss the effects and results when theories "talk" to each other in a different way. Instead of the academic conversation I discuss above, I propose that similar and new results occur when theories engage in an "analytical" conversation when two or more theories interact to inform a textual analysis. The use of multiple theories and methodologies in a single project is hardly a novel idea, but neither is the idea of division between theoretical traditions in such conversations. Sometimes differences between one theory
and its academic tradition lead to certain incompatibilities or even outright rejection of another. Within argumentation studies, this division has, at times, been present in the classification of argument as either logical, dialectical, or rhetorical. From the time of the first Greek philosophers and rhetoricians, theories of argument have been split along the lines of persuasive versus dialogic pursuits, and adversarial versus logical intent.

I intend to revisit these distinctions in order to demonstrate how modern argumentation theory has already blurred these theoretical lines, and what may be gained when particular frameworks from "opposing" traditions of argument engage in analytical conversation. Since making a universal claim for all theory, argument-related or otherwise, is beyond the scope of this thesis, I focus on two prominent modern frameworks: Chaim Perelman's New Rhetoric and Douglas Walton's New Dialectics.

I have chosen these two frameworks, in part, due to the argumentative traditions present in each theory's title. Rhetoric and dialectic represent two often conflicted traditions of argument and discourse that presents a good example of division within the greater academic conversation. More importantly, the addition of "New" within each title represents an evolution beyond the division that I loosely define as persuasive versus collaborative. I unpack the nuanced complexities of each tradition and the division between the two later on in the first chapter. Ultimately, both frameworks encompass the academic distinctions between rhetoric and dialectics and the blurring of such distinctions in recent history.

Beyond addressing the differences and compatibilities between the two frameworks, I examine what may be gained when the frameworks engage in analytical conversation. I explore what an analytical conversation may reveal or tell about the story expressed within the arguments
and context under analysis. In the end, I advocate that a unique model of argumentation results in a way only possible through such an analytical conversation.

I situate this analysis in a practical example of argument: a textual dialogue between professors David Cope and Douglas Hofstadter discussing the ontology of creativity in the wake of artificial intelligence and music composition. Cope's creation, a computer program capable of creating new music in the styles of previous composers, prompts the two to discuss and debate the implications of such a program on the understanding of human and computational creativity.

My thesis is divided into five chapters. I discuss the various literature associated with New Rhetoric and New Dialectics (chapter one), and Cope's program, Experiments in Musical Intelligence (chapter two). From that point, I analyze the exchange between Cope and Hofstadter (present in Cope's book *Virtual Music*) using both the New Rhetoric (chapter three) and New Dialectic (chapter four) frameworks. Finally, I conclude in chapter five with a discussion of the overall insight into the argumentative story between Cope and Hofstadter, and the analytical conversation between New Rhetoric and New Dialectics. Ultimately, I argue that the contribution of both New Rhetoric and New Dialectics reveal a modified process of argumentation beyond what each framework alone can accommodate.
Chapter 1: New Rhetoric & New Dialectics

In order to begin to understand how New Rhetoric and New Dialectics may be used in a collaborative, analytical manner, the first step is to identify the focus and limits of each framework within argumentation studies. In this chapter, I review both frameworks and their common ground. In particular, I focus on how each framework incorporates the notion of reasoning beyond formal logic. Finally, I examine potential analytical limitations of each framework, and make the case that both frameworks may compliment the other by addressing these limitations.

New Rhetoric

Chaim Perelman and Lucie Olbrechts-Tyteca offer a nonformal understanding of arguments within rhetorical contexts. Since neither Cope nor Hofstadter argue using formal logic, this particular framework has the potential to accommodate the value judgments and philosophical claims present within the text. I examine the history and basic of New Rhetoric, as well as its influence on argumentation theory in recent years, and conclude with the limitations of Perelman’s rhetorical reasoning.

New Rhetoric Project. The origins of Perelman and Olbrechts-Tyteca's New Rhetoric Project (NRP) were from an academic deficiency identified by Perelman in the early years of the project in the 1940s. Coming from a background in logical positivism, Chaim Perelman began to question the ability of formal logic and argumentation to adequately address practical reasoning (Perelman, 2001). Specifically, the logic of value judgments seemed to be a weakness of formal argumentation theory at the time. Logical positivists believed that a logical analysis of value
judgments was impossible. The subjective nature of value judgments conflicted with the pursuit of sense data in formal logic. Rejecting these notion of logical positivism (Maneli, 1994), Perelman and Lucie Olbrechts-Tyteca undertook a ten year project starting in 1948 researching the logic of non-formal arguments.

Perelman and Olbrechts-Tyteca researched and wrote in the various fields of science, philosophy, religion, policy, and academia that; eventually publishing of *Traité de l’argumentation - la nouvelle rhétorique* (*The New Rhetoric: A Treatise on Argumentation*) in 1958 which had a tremendous impact on argumentation studies to the present day (Frank, 2004).

The underlying structure of the NRP relies on the idea of “securing adherence of those to whom it [the argument] is addressed” (Perelman & Olbrechts-Tyteca, 1969, p. 19). Adherence is acceptance of the argument or line of reasoning. For Perelman, formal logic is no longer the sole measure of successful argumentation. The practical effects of argument, such as adherence through persuasion, is the central focus. Arguments begin from specific points of agreement: presumptions, facts, and truths, and values. These points essentially determine the reality and grounds of the argument, and particular conditions for successful adherence for the audience.

As a form of persuasion, the audience is an important component in the NRP framework. For Perelman, the audience can be broken down into two unique concepts; the particular audience (which is being addressed) and the universal audience (the ideal audience for the argument to be made). In both cases, the speaker tailors the specific arguments and values based on the audience in order to persuade audience members. The speaker may promote a certain “presence” by emphasizing some values while de-emphasizing others in order to establish further adherence with the audience. Within the NRP framework, Perelman and Olbrechts-Tyteca lay out
several argumentation techniques.

The important thing about “reality,” for Perelman, is that it is made up of points of agreement between speaker and audience rather than objective truth. Specific argumentative techniques start from these agreed upon points, and fall under two general categories: associative and disassociative techniques. Associative argumentative techniques work to establish adherence based on appealing to reality or establishing what is real. Quasi-logical arguments are a special form of associative arguments that mimic the structured framework of logical/rational arguments. Definitions, arguments of reciprocity and probability, and relations of division are all specific types of quasi-logical arguments that Perelman details.

The general concept of association attempts to bind two distinct concepts together. Appealing to reality attempts to establish arguments through various forms such as cause and effect, action consequences, and associations of people to acts or authority. Establishing reality can be accomplished through arguments via models or analogies/metaphor. Associative arguments can also be used to prevent or deny specific concepts from being bound. Associative arguments are the primary way speakers can establish new connections and ideas in or from the accepted reality. Since these arguments facilitate the overall argumentative process, the specific analysis of these arguments is also important.

The final argumentative concept is arguments by disassociation. Here, arguments are made to make a distinction in a unitary term. Perelman argues that such disassociations split the concept into two terms. One term is valued (and thus acceptable), while the other is diminished in value (or rejected). Perelman's famous appearance/reality of an oar example helps to demonstrate this idea (Perelman, 2001). When an oar is pushed in water, it appears to distort and
bend. While its appearance conveys a certain distorted reality, Perelman argues that a certain disassociation must be made between this distorted reality and what is agreeably real: the oar remains solid. As a result, there is a certain rhetorical preference for what is real over what appears to be real.

**Rational reasoning of creativity.** One key component of Perelman’s framework is the preference of rhetorical reasoning over logical reasoning. In other words, for Perelman, argumentation and justification are required in instances where either absolute truth is not apparent, or does not exist. Social elements, such as values, opinions, and emotions can’t be adequately addressed by logical reasoning. As a result, rhetorical reasoning is a driving concept in this framework and Perelman’s regressive philosophy that I discuss later on.

**Influences of NRP.** Since the first publication and subsequent translation (Perelman & Olbrechts-Tyteca, 1969), *Traité de l’argumentation - la nouvelle rhétorique* has sparked over fifty years of argumentation research that builds on Perelman and Olbrechts-Tyteca's original work. The work done within the framework of the NRP focuses primarily on scientific, philosophical, and policy argumentation (Gross & Dearin, 2003).

Mieczyslaw Maneli (1994) extends the application of the New Rhetoric Project beyond traditional philosophy and law, and into “modern humanism”. His basic argument is that the foundational tenants of humanism (i.e. correcting instances of oppression) are also foundational in Perelman's *New Rhetoric*. Values such as tolerance, freedom, and social justice can all be seen as commonalities between humanism and *New Rhetoric* (Maneli, 1994, p. 124-133).

David Frank has catalog the influence of the NRP over the years (2004, 2008, 2010). A major trend of subsequent research is studying the implications of particular components of the
NRP. The role of disassociation is studied in relation to things such as strategic maneuvering and presupposition (Degano, 2007; Frank, 2007; Olson, 1995; van Rees, 2007a). The distinctions of particular and universal audiences is also examined (Aikin, 2008; Crosswhite, 1989). Even the very essence of New Rhetoric is examined by looking at adherence in relation to particular values (Goodwin, 1995).

By far the largest body of research is the impact of New Rhetoric on traditional argumentative topics such as fallacies (Crosswhite, 1993, 1995; Laufer, 2009; Leff, 2009; van Eemeren & Grootendorst, 1995; Van Rees, 2007b; Warnick & Kline, 1992). The importance of this research is that many of these studies still attempt to relate the NRP framework to traditional concepts of logic. Further research outside of these traditional concepts of logic offers insight into how the NRP applies in other areas of study. One area of potential research that is absent from the previously mentioned research projects is the social construction aspect of New Rhetoric.

The idea of a socially constructed reality plays a foundational role in Perelman’s argumentative framework, and his very philosophy of necessary being (Frank & Bolduc, 2003). Termed “regressive philosophy”, Perelman’s notion of truth is different from the notion of absolute truth found in many “first philosophies” (Tindale, 2010). Whereas many philosophers argue for discovering absolute truths (i.e. concrete facts), Perelman (1979) pointed out that once these truths are established, philosophers must then explain the phenomena of disagreement, or conflicts with these truths. As a result, Perelman advances a philosophy that, “treats not the true, but the preferable, and which one might consider as the logic of value judgments” (p. 191). This philosophy overcomes the challenge logical positivism identified and makes it possible to study
value judgments within the reasoning process.

Tindale (2010, p. 346) summarizes regressive philosophy as, “...pluralistic and open, and promotes a logic of value judgments through an emphasis on what is preferable rather than what is true”. It should be noted that while regressive philosophy isn’t rooted in the sociological traditions of social constructionism (Berger & Luckmann, 1966), it still shares the conceptual assumption that truth (or knowledge) is derived from interaction. In utilizing the New Rhetoric framework, argumentation becomes the form of interaction aimed “at gaining the adherence of minds...” (Perelman & Olbrechts-Tyteca, 1969) in terms of what is valued as truth.

Seen in this light, Perelman’s notion of reality is akin to social reality in the sense that the quest for objective truth is rejected in favor of communicatively established social truth. From this foundation, the argumentative techniques of the New Rhetoric framework take on the role of negotiating, affirming, or denying agreed upon reality. Associative techniques either reaffirm reality by drawing arguments from what has already been accepted, or establish new reality by forming new arguments about what ought to be accepted. The technique of disassociation attempts to differentiate certain aspects of this agreed upon reality by distinguishing previously associated concepts with value preferences for one concept over another.

The importance of this interpretation of social reality becomes evident when applied to the concept of reasoning. Since absolute truth and formal logical reasoning aren’t addressed in the framework, the overall concept of reasoning must accommodate the negotiation, affirming, and denying of this agreed upon reality. Next, I discuss how Perelman’s notion of rhetorical reasoning and adherence achieves this accommodation, and the limiting implication that results.

**Analytical limits of New Rhetoric.** Again, Perelman’s original notion of rhetorical
reasoning rests on the rejection of formal logical reasoning. Rhetorical reasoning uses probabilities, values, social constructions, etc in order to define what is reasonable or not. Arguments within this framework serve as ways of facilitating rhetorical reasoning through association and disassociation (and quasi-logical arguments). Arguments work to facilitate rhetorical reasoning to gain adherence with a speaker’s audience. Applied to traditional rhetoric, where arguments are a means of persuasion, this framework provides a set of tools for considering not only argumentative techniques, but also the speaker’s rhetorical audience.

The crucial assumption of this framework (what I argue is the primary limitation as well) is Perelman’s assumption that adherence of an audience is the speaker’s primary goal. This assumption rests on the concept of argument-as-product (Reed & Walton, 2003) where arguments are conceptualized as discrete units of communication. This idea traditionally focuses on the internal structure and content of arguments. This contrasts with argument-as-process that looks at the entire contextual process and components of argumentation. In the New Rhetoric framework, arguments as products are the primary way adherence is gained. Audience members can either accept or reject the argument at hand, and thus adhere to the underlying ideas.

If a rhetorical analysis is just focused on the speaker’s arguments, or perception of the audience, then this assumption may be enough to gain further insight into the overall rhetoric. As Reed & Walton (2003) argue, however, such analyses often require an extension to argument-as-process. This concept broadens the definition of argument to include the entire process of argumentation. Here, the elements of the context such as the greater rhetorical situation may play an important consideration. The greater argumentation process and context are similar to the narrative metaphor of a “story”. The concept of argument-as-product looks only at the specific
sentences of a story, whereas the argument-as-process concept extends its look to the entire story.

I question whether we should assume, as the NRP framework does, that adherence is always the goal of argumentation. Traditional rhetoric and philosophy alone, particularly Aristotle and Plato, demonstrate that different argumentative contexts have different goals. Aristotle’s concept of rhetoric seeks the available means of persuasion. Plato’s concept of philosophy pursues absolute truth. In both of these conceptions, arguments as products are used in pursuit of an idealistic goal that may or may not be achieved.

Beyond these traditional goals of argumentation, part of the reasoning at work within New Rhetoric also prevents the pursuit of adherence from being the exclusive goal. Ultimately, the assumption that the pursuit of adherence underlies all argumentative processes must address the very same rejection Perelman confronts logical positivism with: the ideal of universality. In sum, the pursuit of absolute truth can not universally hold in all contexts since any instances that run counter to the assumption can not be accounted for by logic. When the pursuit of absolute truth is replaced with adherence, the same issue comes up. First, adherence in all contexts is a logical rationalism that operates on the same mechanisms originally rejected by Perelman. Second, the framework of New Rhetoric lacks a concept of reasoning that does not rely on persuasive adherence.

In layman’s terms, the fundamental understanding of reasoning within the New Rhetoric is rhetorical in nature. Rhetorical reasoning requires adherence, which in turn requires the use of argument and communication. Nothing else within Perelman’s concept of New Rhetoric and regressive philosophy can account for contexts where persuasive adherence isn’t the primary goal, or possibly even present. This is the same critique that concepts such as the critiques of
“Big Rhetoric” have expressed: persuasion (or at least intended persuasion) may not be everywhere in all acts of communication.

Ultimately, the very existence of alternatives to adherence/persuasion demonstrates that the analysis can not simply make the assumption that the pursuit of adherence is the one and only goal present. First, each speaker may have a different goal altogether. Second, alternative interpretations of the primary goal of the dialogue itself (i.e. the nature of the debate) may reveal further insights that the assumption of adherence may miss. The limitation of New Rhetoric, in combination with the lack of alternative models of reasoning and dialogical purpose, can not analyze the argumentative process as a whole outside of rhetorical reasoning. The contribution of another argumentative framework is required.

Walton’s New Dialectics may help fill the void provided by the NRP framework. As I will demonstrate in the next section, New Dialectics provides a normative framework for analyzing and evaluating both individual arguments, and the greater argumentation context/process in a way that doesn’t automatically assume that adherence is the primary goal of the process or speakers. As well, New Dialectics shares a variety of similarities with New Rhetoric that facilitate a conjoined analysis of Hofstadter’s and Cope’s commentary. Finally, in addition to the limitations that New Dialectics can overcome, this concept also has a limitation that I argue can be addressed by New Rhetoric.

**Dialectics**

**Old & modern Dialectics.** The idea of dialectics encompasses the use of argumentation in a dialogical context. Whereas argumentation theory and rhetoric often meet in monologic contexts (i.e. speaker and audience), traditional notions of dialectics include two (sometimes
more) interlocutors engaged in some form of argumentative discussion. Besides this dialogical vs. monological distinction, the important difference between dialectics and rhetoric is the role of argumentation. Whereas rhetoric often uses argumentation as a process or means of persuasion, dialectics relies on argumentation as a process of collaboration.

The ancients first establish this distinction in their philosophical pursuits of categorizing different types of discourse and scientific pursuits. Aristotle (n.d./2004), in “On Sophistical Refutation”, defines dialectical arguments as "those which, starting from generally accepted opinions (endoxa), reason to establish a contradiction" (165b3-165b4). In comparison with his notion of rhetoric as the “available means of persuasion”, the use of persuasion and reason are conceptually distinct: logic and reason are meant to establish dialectical contradiction while persuasion is meant to establish agreement.

Plato uses this distinction in his rejection of rhetoric. To him, dialectics is "the art concerning discussions" (Robinson, 1953, p. 69) that is considered an ideal method (p. 70). Dialectics are ultimately a pursuit of truth and knowledge. Procedures, such as the Socratic method, allow interlocutors to challenge each other’s beliefs and opinions through questioning in the attempt to reach absolute truth.

From these roots, modern dialectics transformed into a variety of formulations that retain the use of argumentation in varying pursuits of truth, conflict resolution, information collecting, and sense-making. Kant (1788/2003), in his critique of the dialectical method, argues that the nature of identifying contradictions make the whole process sterile. In response, various academics such as Hegel (1874), followed by Marx (1887/1992), modernize the dialectical method to focus on the abstract of thought, and materialism respectively (p.29).
The application of argumentation theory in informal logical contexts (see Walton & Godden 2007; Johnson & Blair, 2002) and everyday discussions (see van Eemeren & Grootendorst 1984; 1992; 2004) has also modernized dialectics as a normative analytical framework. For example, the dialectical approach of pragma-dialectics involves a normative procedure for conflict resolution. In short, the modernization of dialectics retains the use of argumentation in a procedural context while broadening the purpose of the procedure beyond truth seeking.

**New Dialectics.** One such example of a modern interpretation of dialectics is Douglas Walton’s (1999) New Dialectics. I have selected this as a framework for addressing New Rhetoric’s analytical limitations primarily due to its defining features that provide solutions for New Rhetoric’s limits by either overcoming or avoiding such limitations. In the big picture, I argue that these features and similarities help to facilitate a collaborative, analytical conversation between the two frameworks within my thesis.

Following in the dialectical tradition, New Dialectics focuses on argumentation as a process of some kind of reasoning. The framework departs from old dialectics in that logical reasoning in the pursuit of absolute truth isn’t the ultimate purpose of dialogue. Instead, New Dialectics works on a form of reasoning similar to Perelman’s rhetorical reasoning: presumptive reasoning. Presumptive reasoning involves accepting conclusions based on inferences (or reasons to accept the conclusion), thus committing to the conclusion until other inferences may alter such commitment. For example, presumptive reasoning suggests that the sun will rise tomorrow based on past experience people can use to commit to the overall claim. New evidence (i.e. the sun going dark) would alter this commitment. Evidence, or reasons to accept a claim can
only establish conditional commitment until new evidence or reasons are introduced. The important distinction between presumptive and rhetorical reasoning is that presumptive reasoning is applicable in a variety of ways. It can be used in persuasive appeals, much like rhetorical reasoning, but it can also be used in sense making, information seeking, or conflict resolution. Therefore, this form of reasoning avoids the limitation of New Rhetoric’s assumption that persuasion is always the goal of the speaker and situation.

The idea of argument-as-product plays a similar role here as in traditional dialectics, in that arguments are an instance of reasoning used to fulfill the goal(s) of the speaker(s) and situation. Arguments can communicate values, logic, opinions, and social constructions in ways that are more or less organized in “chains” of presumptive reasoning. They can also take on different forms, such as direct claims, indirect or weak claims, as well as questions and exploratory commentary. Another component of Walton's framework is a language to discuss the types of discussion or conversations arguments may occur in.

**Types of dialogue.** One solution New Dialectics offers to New Rhetoric’s persuasive assumption is the analytical classification of types of dialogues. New Dialectics also expands beyond the arguments themselves to the process of argumentation. The idea of dialectic itself becomes a process consisting of two parties using arguments to reason for a common purpose. Walton argues that the context of the argumentation process will influence how arguments are established and evaluated, as well as how the goals of the speakers and situation are determined and pursued. For this analytical framework, Walton (1992) offers six different types of dialogue that vary in terms of participant and situational goals (Walton, 1999, p. 77): Table 1
Walton’s Six Types of Dialogue

<table>
<thead>
<tr>
<th>Type Of Dialogue</th>
<th>Initial Situation</th>
<th>Participant Goals</th>
<th>Dialogic Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persuasion</td>
<td>Conflict of Opinion</td>
<td>Persuade Other Party</td>
<td>Resolve/Clarify Issue</td>
</tr>
<tr>
<td>Inquiry</td>
<td>Need to Have Proof</td>
<td>Find/Verify Evidence</td>
<td>Prove (Disprove)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hypothesis</td>
</tr>
<tr>
<td>Negotiation</td>
<td>Conflict of Interest</td>
<td>Get What You Most Want</td>
<td>Reasonable Settlement</td>
</tr>
<tr>
<td>Information Seeking</td>
<td>Need Information</td>
<td>Acquire/Give Info</td>
<td>Exchange Info</td>
</tr>
<tr>
<td>Deliberation</td>
<td>Dilemma or Practical Choice</td>
<td>Coordinate Goals/Actions</td>
<td>Decide Best Choice of Action</td>
</tr>
<tr>
<td>Eristic</td>
<td>Personal Conflict</td>
<td>Verbally Hit Out Opponent</td>
<td>Reveal Deeper Basis of Conflict</td>
</tr>
</tbody>
</table>

The analytical approach to the New Dialectics partly relies on contextualizing the process of argument in a specific type of dialogue. The critic then analyzes arguments are then analyzed by identifying propositions and connecting inferences that lead to the derived conclusions.

Walton (1992) notes that when these concepts are practically applied, the presence of multiple or shifting types of dialogue are likely to exist. Any given discourse may encompass a variety of types as times goes on.

**Argument schemes.** Beyond the type of dialogue(s) at work in a given context, the second component of Walton’s (1999) framework is the classification of arguments themselves. Argument schemes offer models that represent patterns of reasoning (Walton & Reed, 2003). They essentially abstract and model everyday arguments using various deductive, inductive, and abductive/presumptive structures.

Originally, Walton introduces 96 schemes as a way of analyzing arguments within the
discourse. In combination with the type(s) of dialogue within the discourse, arguments are
described and evaluated in a way that attempts to preserve the contextual relationship arguments
have with any given situation. Walton (1999) argues that:

“The new dialectic is a framework for reasoning that strikes a healthy balance between
descriptive empirical research on argumentation and normative or abstract logical
methods of setting standards for good arguments. Such a balance, although lacking in the
past, is healthy because neither the empirical or the normative approach, by itself, can
provide a method of argument evaluation that is both objective in standards and that fits
the realities of real cases of argumentation in a way that is practically useful.” (p. 89-90)

Therefore, the abstract analytical approach of evaluating arguments must recognize and
account for the contextual nature of the “everyday” situation.

**Potential limitations.** Given that a part of my project is to explore how New Rhetoric and
New Dialectics may interaction with an argumentation analysis, a crucial step is to identify
analytical limitations New Dialectics may present. I have identified two limitations that the
framework presents: one from the normative component of the framework, and one from the
descriptive component. Both of these limitations become apparent when the framework is
applied in the analysis of argumentative text.

First, depending on the purpose of the analysis itself, a normative claim or critique may
not be required of the framework. In other words, the evaluation of the quality of the arguments
may be beyond the scope of the analysis. Later on, I argue that my project is such a case. In this
case, I demonstrate that the descriptive and abstract components of the framework can still be
used to provide further understanding of the arguments and the overall discourse.
Second, one potential limitation I intend to explore is how well the descriptive components of the framework, such as the identification of dialogue types and argumentation schemes, apply to a textual analysis. Part of Walton’s description of New Dialectics places the process of argumentation within the “everyday.” While this is an ambiguous term, it suggests some sort of discourse with a (presumably) material context. At this point, it is difficult to determine whether the textual context of Hofstadter and Cope’s dialogue adequately encompass this material context, or whether this is an important component in general.

**Dialectics applied to rhetoric.** I conclude this section with my own analysis of the theoretical similarities between New Dialectics and New Rhetoric. My intention is to solidify a foundation of commonalities to proceed from. This foundation will map out where each framework fits in the overall analysis, and will identify useful areas of overlap.

Two similarities promise a good deal of compatibility between the frameworks. In general, both frameworks share the common bonds of argumentation theory and analysis. Both frameworks share the idea of argument-as-product where arguments are discrete units of communication that help facilitate and communicate ideas and values. More importantly, both frameworks incorporate the identification and potential evaluation of arguments as various techniques and schemes.

Second, both frameworks conceptually rest on similar foundations of reasoning. Arguments within New Rhetoric operate on rhetorical reasoning that seeks adherence. Arguments within New Dialectics operate on presumptive reasoning that facilitate commitments. Adherence and commitment suggest the acceptance or rejection of the argument, ideas, or values within the discourse. Both terms also suggest the possibility of varying degrees of acceptance, as
well as the possibility of losing (or regaining) acceptance throughout the dialogue. In the end, both notions of reasoning avoid the static quality of formal logic that assumes one way and degree of reasoning for any given idea.

Finally, I make four analytical choices to help facilitate interaction between the two frameworks. First, in order to actively overcome the limitations of New Rhetoric I previously identify, I have decided to analyze the text using the assumption of presumptive reasoning over rhetorical reasoning. The crucial difference is the assumption of persuasive intent on the part of the interlocutors. Basically, this choice commits me to avoiding any analytical judgments on the goals of the speakers and the discourse until I analyze the type of dialogue(s) at work. Persuasive intent may vary from being the only intent, mixed intent, or being completely absent within the discourse.

Second, in order to facilitate commonalities between the terminology of the two frameworks, I have decided to classify Perelman’s argumentation techniques (quasi-logical, association, and disassociation) as types of schemes within Walton’s framework. Walton & Reed (2003; see Walton & Macagno, 2007, p. 101) even cite Perelman and Olbrechts-Tyteca as having “identified many of these defeasible types of arguments used to carry evidential weight in a dialogue” (p. 197). Within Walton’s framework, arguments of association and disassociation are presumptive in the sense that they are subject to change upon further consideration of new inferences. In fact, Perelman’s notion of reality is presumptive in that it may change depending on how the audience adheres to the values and ideas being argued/debated.

Third, Walton’s use of traditional argumentative components such as premise and conclusion requires me to make an interpretive move since Perelman’s framework seems absent
of these notions. On one hand, I could simply dismiss this component of Walton’s framework, but this move seems to diminish the understanding of how presumptive reasoning operates within each argument. As well, the commonalities between the frameworks offer a way to apply Walton’s terms to Perelman’s rhetoric. Specifically, the associations/disassociations one may argue can easily be considered the “conclusion” the argument advocates. More importantly, New Dialectics requires commitment to accept the conclusion. In the case of New Rhetoric, adherence may satisfy this requirement.

The concept of a premise offers a greater challenge in that the traditional notion is something that is true. Within formal logic, premises are required to be irrefutable in order for the logic to be sound. Since both frameworks operate on informal/nonformal ideas of reasoning, this requirement becomes irrelevant. As a result, a gap is left to be filled in terms of what a premise may look like in the New Rhetoric framework. Tindale (2006) offers an interpretation to fill this gap. In discussing the similarities and differences between informal logic and New Rhetoric, Tindale defines Perelman’s notion of starting points of agreement as premises. What is agreed upon or conceptually “true” for participants may serve the same role as formal premises. These starting points may offer certain topoi for arguers to use to move towards a conclusion (i.e. an association or disassociation). Within the New Dialectical framework, these topoi are often inferences participants must make in order to connect what is already accepted to the final conclusion.

To summarize so far, my road map indicates that at the conceptual level, my analysis must reject the assumption that Hofstadter’s and Cope’s arguments are automatically persuasive in nature. Determining the argumentative intent of the interlocutors and their dialogue requires
further analysis into the types of dialogue at play, and how the themes of association/disassociation exist within the dialogue. Since both frameworks conceptualize argument types or schemes, my work to identify particular themes will be useful when analyzing the role of the arguments within the dialogue. Beyond identifying the types of dialogue and the argumentative schemes, my analyze also identifies the starting points of agreement between Hofstadter and Cope. The New Rhetoric framework will play a larger, influential role later on in my analysis by providing insight into the reality of associations that exist between Cope and Hofstadter in their exchange.

My final choice involves using the New Dialectics framework in a more diminished capacity from what Walton intends. As I argue in the previous section, the normative component of Walton’s framework may be more useful in certain projects than in others. For my project, my concern is more descriptive than normative. Specifically, I hope to describe how these arguments are conceptually shaping the various values and ideas at play (i.e. creativity and authenticity) within the context of the dialogue between Cope and Hofstadter. Since this defines the scope of my project, a normative evaluation of these arguments would surpass this scope. In the next chapter, I discuss the text under analysis in greater detail.
Chapter 2: EMI

David Cope's *Virtual Music* is a contribution to an ongoing conversation about the philosophy and nature of artificial intelligence. The discourse within his book primarily focuses on the implications of artificial intelligence instead of debating the specific accomplishments of EMI. Specifically, the issue of creativity is a definitional point of contention between Cope and Hofstadter. In this chapter, I begin the discussion of Cope, EMI, and *Virtual Music* with a basic review of AI research in order to lay a foundation. I review Cope's history with EMI and his book in particular. After this review, I touch on specific literature offering various perspectives on creativity and AI in order to offer further understanding on the central topic between Cope and Hofstadter.

**Artificial Intelligence**

The modern academic field of artificial intelligence, with its focus on simulating aspects of human intelligence, began with a conference at Dartmouth College in 1956 (McCorduck, 2004). The conference represented a foundational discussion on what it means to be an AI researcher, with input from various researchers, including organizers Marvin Minsky and John McCarthy (who coined the term “artificial intelligence” at the conference). Often regarded as the “birth” of artificial intelligence as a scientific discipline, the conference set the research agenda for the next 18 years.

While the research history of artificial intelligence has grown to include many diverse areas, some more successful than others, two important themes come up that are related to my thesis. First, the first twenty years of artificial intelligence saw a confrontation of optimistic early predictions with the realities of limited capabilities of technology of the time (Russel & Norvig, 2010).
2003). Part of this issue came from the limitations of technology (i.e. limited storage space for
databases). More important, however, was that seemingly simple tasks such as object learning
and recognition turned out to more complex than researchers first predicted.

Researchers responded to these challenges with a new focus and direction for artificial
intelligence. The goal of research shifted from the duplication of human operations, to the
imitation of them (Minsky, 1985): instead of focusing on the exact duplication of human
processes (such mimicking the actual neural connections of the brain), research shifted to the
imitation of such processes and products through alternative means. One area of research that
resulted from this is the “expert system,” or a machine capable of emulating decision-making
capabilities of human experts in their domain of expertise. The purpose of the machine or
program is to imitate expertise in a particular area (such as playing chess). The focus narrows the
scope of the machine’s purpose to one particular domain. In research on expert systems, the goal
is no longer to duplicate the human decision making process, but to instead have machines
able of achieving similar results through computational means.

The importance of this shift from general intelligence to expert systems lies within the
second theme. While the original goal of this research was focused on simulating, and later
imitating, human operations/processes, further research has also focused on the human processes
themselves. For example, research in the expert system of computational creativity has led
researchers to reflect on definitional components and evaluative criteria for recognizing
creativity in general. In effect, artificial intelligence has brought up questions about the nature of
the very properties of human intelligence researchers are trying to imitate.

The shift from duplication to imitation by AI researchers has led researchers to question
what things like “creativity,” “decision making,” “sense-making,” etc. are outside of human intelligence. In terms of creativity, one may ask how the computational creativity of a machine differs from human creativity beyond the mere mechanics of the process. Is computational creativity “authentic” creativity? Is it a mere extension of a program’s or the programmer's creativity?

There have been two views on questions about machine creativity. Psychologist Kyle Jennings (2010), in advocating the necessity for “creative autonomy” - where programs work without direct interference from programmers - argues that, “Creativity is a social construction, and thus cannot be reduced to unassailable formal properties” (p. 490). This idea suggests that instead of having an objective, static understanding of creativity, our understanding is dynamically constructed through social understanding and interactions. Other researchers have attempted to ground the idea of creativity with a sense of objective criteria (See Boden, 1991; Colton, 2008; Ritchie, 2007). This research suggests that if creativity is taken to be a social construct, certain criteria are required to define and identify the presence of creativity within humans and machines. In other words, these criteria answer the question of, “if creativity is defined as X, how do we recognize X in our own social realities?”

In terms of artificial intelligence, the social construction of creativity means that our understanding of creativity may be defined and redefined in light of computational imitation. The presence of computational creativity, for example, may lead people to rethink what creativity means in general. Issues such as the ontological status of creativity, the inherent differences between human creativity and computational creativity, and the implications of these issues can drive a dialogue that attempts to create or modify a socially constructed understanding of
creativity. In fact, the case study for my thesis examines this very possibility. *Virtual Music* itself is an instance where a particular expert system imitates the creativity of humans through computational means.

**EMI**

*Experiments In Musical Intelligence.* Creativity is often associated with concepts such as spontaneity, ingenuity, and authenticity. When thinking of the great musical works by equally great composers such as Mozart, Bach, and Handel, the quality of creativity becomes something exclusive and unique. In many ways, their creativity is what set these composers apart from others in their profession. To some musicians, these individuals had a way of “speaking” through their music and, by extension, their creativity (Cope, 2001).

Within the domain of artificial intelligence research, academics focus on musical creativity as something to be imitated. One view of creativity is recombinancy: splicing and gluing previous material together to create something new (Cope, 1991b). The idea is simple: take existing work, such as musical notes; break them down into various groups and units; rearrange these groups into a new orientation; and presto, a new work of art is created.

The center of my rhetorical critique focuses on one such attempt by composer and University of Santa Cruz professor, David Cope. Cope’s story begins in 1981 when he experienced the bane of many composers and writers: writer’s block (James, 2002, p. 13). Noticing this, a friend came up and teased that Cope could use his computer to compose for him. This possibly apocryphal story sums up the origin of Cope’s creation: a computer program capable of composing music on its own that Cope calls Experiments in Musical Intelligence.

EMI is a program capable of pattern based analysis and composition, in a style that Cope
refers to as “recombinant music” (Cope, 1991b). Over the course of a seven year period of trial, error, design, and research during the 1980s, Cope produced a program capable of analyzing the textual works of classic composers, identifying unique patterns that arguably define said the composer’s style, and reproducing those patterns in new compositional works.

While a detailed technical analysis of the inner workings of EMI is beyond the scope of my thesis, a brief exploration of them helps us better comprehend the influence and controversy of EMI. The mechanics of the program run on 20,000 lines of LISP, a language common in AI research (Dion, 2006; Cope, 2001), hand-coded by Cope himself over a period of 20 years, running on Cope’s “prehistoric” Macintosh computer.

The mechanics of EMI operate on algorithmic, pattern based compositional techniques. According to a review by John Dion (2006), “EMI deconstructs music based on a series of criteria in such a way that it can identify recurrent themes and structures used by a particular composer.” This is achieved through a few simple (although highly complex in detail) steps. First, EMI analyzes notated music for repeating patterns in pitches, voicing, rhythms, harmonies, phrasing, and other musical components. From this, EMI stores these patterns (marked by EMI as patterns that form a composer’s unique style) in a database which can be used in the composition of new pieces. EMI then pulls patterns from this database and combines them into new sequences. Furthermore, these patterns are altered and varied with “variations in key, note choice, and phrasing”. Once EMI repeats this process to the point of a full length piece, a new compositional work is born.

EMI employes various algorithmic patterns to insure that the new compositions are not frantic two-bar medleys of Mozart’s works. Cope encoded certain guidelines into the program to
make sure that the variations and reorganization of previous material still make musical sense in the context of the new composition (Cope, 2001; Dion, 2006). Cope refers to these guidelines as “syntactic” and “semantic” meshing. Syntactic meshing insures that individual patterns link up well in terms of phrasing and texture, while semantic meshing insures continuity of the entire piece through conflict and resolution. If applied in the creation of a new story from previous work, these guidelines will not only insure that the word and sentence fragments taken from other stories fit together, but also that the entire story follows the same flow of the original pieces in terms of introduction, rise, climax, and resolution.

The identification of “signature riffs”, or unique groups of notes and rhythms to individual composes rounds out EMI’s analytical “gifts”. The program looks for specific sequences of notes that are often repeated, most often through multiple works of the same composer, that hold a special intervocalic relationship among the notes. These notes use the same spacing between the notes, regardless of the actual pitches or rhythm. Therefore, these lines could be altered in terms of pitches and rhythm while still retaining the same sequence of relationships in the same way that a musician can alter “Twinkle Twinkle Little Star” by altering the key or individual note durations, and still have listeners identify the sequence as “Twinkle Twinkle Little Star”.

These coded analytical/compositional guidelines form the basis of what Cope argues is EMI’s creativity (Cope, 2001). Instead of a process of mere replication and alteration, EMI’s recombinant music is on the same level of creativity as more traditional notions of creativity in this view. As I discuss later on, this recombinant music is actually the very idea of creativity Cope sees operating within human composers as well. Cope argues that the similarity of EMI’s
music to human-created music indicates that the underlying compositional processes are similar.


Cope and one of his most notable interlocutors, Douglas Hofstadter, report the divided reactions to EMI (Cope, 2001). On one hand, the program has been fairly well received in both musical and computer science communities. To this day, EMI remains an exemplar of AI capability within computer science. Its works have been featured and played by various symphonies and Cope himself has become an influential presence within artificial intelligence and computer science circles. At the same time, the creation of EMI has also drawn its share of criticism.

In Virtual Music, Steve Larson (2001) organizes his contribution to Cope’s book at a letter to EMI. Larson writes as if EMI is a beginning compositional student. From this, Larson points out particular compositional flaws typical of beginning students, and offers suggestions to improve. This example coincides with Cope’s and Hofstadter’s reports of audience members assessing EMI’s works as faithful yet flawed.
EMI has sparked controversy over the very nature of creativity. While Cope argues that EMI’s creative process is similar to the creativity of human composers creating recombinant music, others such as Hofstadter argue that creativity has more depth than what Cope describes. The resulting discussion and controversy ultimately questions whether EMI as a program is capable of being creative, and what the very concept of creativity actually means.

Creativity and AI. In the literature on artificial intelligence, the issue of creativity takes on numerous forms, but often centers on what creativity actually is, and whether computers are capable of expressing it. Within the context of EMI, the question is whether the process EMI uses to produce new works of art can be described satisfactorily as a creative process or not.

In the opening paragraphs of his recent work, Computer Models of Musical Creativity (2006), Cope wrestles with the idea of creativity by first drawing on various works to define the idea. From various definitions ranging from “inspiration leading to a creative process” (Dorian, 1947), to “the ability to generate new ideas” (Damasio, 1995), part of what Cope highlights is the multifaceted nature of creativity and its associated concepts.

In his writings, Cope often draws heavily on ideas of his rhetorical interlocutor, Douglas Hofstadter. Hofstadter (1995) describes four aspects creativity. First is “having a keen sense for what is interesting”, which Cope equates to having a “strong sense of prejudices”. Second is “following it recursively” or following where those interests may lead. Third is “applying it at the meta-level”, which is roughly concerned with self-awareness for the creativity process and unexpected patterns. Finally, there is “modifying it accordingly”, or having the adaptability to produce the final product in the face of the unexpected or unintended. To summarize, Hofstadter’s notion of creativity involves recognizing and adaptively utilizing the process of
creating new and interesting ideas or objects.

One concern Cope stresses is the difficulty in programming creativity into computers. Besides “adaptability”, Cope argues that most of the descriptive terms Hofstadter uses as attributes for creativity are too vague and challenging to be useful to artificial intelligence. For example, programing a machine to recognize and pursue creative interests is an ambiguous task. Without having any clear understanding of what this task involves, programmers don’t have any way of translating this task into mechanical code. More so, Cope critiques the romanticized versions of creativity. One component of this is determining whether creativity is essentially a noun or a verb: something that people “have”, or “do”. Here he draws on the work of cognitive philosopher Margaret Boden (2004) and supports point that:

“… [the] way in which people commonly deny the possibility of “real” creativity in computers is to appeal to the consciousness argument. ‘Creativity requires consciousness,’ they say, ‘and no computer could ever be conscious.’ We have seen, time and time again, that much - even most - of the mental processing going on when people generate novel ideas is not conscious, but unconscious. The reports given by artists, scientists, and mathematicians show this clearly enough. To that extent, then, this argument is misdirected. (p. 294)

The usefulness of this attack against the “appeal to the consciousness” argument comes in highlighting how many individuals try to draw parallels between human capabilities and computer capabilities. Part of the issue in creativity and artificial intelligence is to figure out not just what creativity is, but whether consciousness is a necessary condition for creativity. In this case, is consciousness as a part of the process a defining factor of creativity? If it is, and
computers are unable to experience consciousness, then they are logically unable to experience creativity. If, however, creativity is an unconscious process, as Boden suggests, then there may still be hope for artificial intelligence. One implication of this distinction may be the difference between machines possessing “authentic” creativity or not.

This is just one example of the “creativity-as-a-process” dilemma. Within my rhetorical analysis, this dilemma plays an important role in arguing whether EMI is truly creating music from a process of creativity or not. Cope adopts a definition that coincides with the creativity-as-a-process model, by defining it as “The initialization of connections between two or more multifaceted things, ideas, or phenomena hitherto not otherwise considered actively connected” (p. 11).

Taking a step back for a moment, I have to address the issue present within the literature: Cope’s formal definition of creativity came several years after his work with EMI. As a result, I can not assume this definition on Cope’s part in my rhetorical analysis. Whether Cope held this view when writing *Virtual Music* is difficult to say with any certainty. What is certain, which I argue in my analysis, is that the underlying tones of this definition are apparent in *Virtual Music*. This exchange focuses on a dispute that influences Cope's later definition. Therefore, the assumptions and arguments about creativity in this exchange play a central role in the creation of Cope's definition.

The final important component to the consideration of creativity and artificial intelligence is the associated values and criteria for judgment derived from creativity and art. A useful analysis of how people judge the “authenticity” of art generated by artificial intelligence (termed computer art) comes from Boden in a 2007 article titled “Authenticity and Computer Art”.
Boden explores two aspects of artistic authenticity that often come up in regards to computer art. The first aspect is an individual's preemptive rejection of computer art before even seeing/hearing the product. Most often, this is done through the rejection of the art’s intrinsic qualities. For example, a critic may look at a computer-generated image and denounce it on the grounds that “it was made by a computer”. This “aesthetic of entitlement to acceptance” questions whether particular art is even worth consideration and acceptance: because the art is computer generated, it is *prima facia* inauthentic.

The idea of preemptive rejection is directly useful for my rhetorical analysis as an explanation for a technique known as a “Turing Test” (Turing, 1950). In general, this is a test of an AI’s ability to “fool” human participants with its abilities (originally by conversing with participants). Often, this is done as a blind test, where human participants are unaware of whether the participant they are interacting with is human or not. Both Cope and Hofstadter employ a variation of this test where listeners compare works of classical composers to works of EMI in the same style, without knowing which piece was composed by human or machine.

The second aesthetic of authenticity that Boden (2007) reviews is the emotional aspect of art. Drawing on the writing of Douglas Hodstadter (2001], and philosopher Anthony O’Hear (1995), Boden characterizes emotional authenticity as the reason for “why no computer could possibly produce an authentic work of art” (p. 5). Hofstadter’s emotional prerequisite to music is actually a reoccurring theme within his commentary in *Virtual Music*, and as such is analyzed later on. Essentially, however, Boden characterizes Hofstadter’s position as the desire for genuine emotion within musical pieces. Conversely, art, according to O’Hear, involves communication between one human being and another. In order for this communication to be
possible, a shared human experience must be possible. If the assumption that computers cannot share this experience is taken for granted, then by definition, they are incapable of producing art. Ultimately, Boden lays out the implications of these points of view:

“Critics of computer art who agree with Hofstadter and O'Hear are demanding authenticity in two senses. On the one hand, they're saying that an artwork must involve some genuinely human communication, springing from genuinely human experience. On the other hand, the communication must be honest--which is why, as suggested above, the charge of hypocrisy undermines an artist's entitlement to acceptance. (p. 11)

Boden synthesizes these perspectives into six basic assumptions critics of computer art may have: 1. art must spring from human agency; 2. art must be grounded in emotion; 3. art must communicate human experience; 4. art must be honest; 5. art must be unique; and 6. art must be transformational. (p. 20). In regards to computer art, Boden argues that the first four assumptions can be satisfied if the human concepts were ascribed to computers as well. The final two assumptions may also be satisfied depending on how the art producing program is coded (i.e. programmed to produce original, transformational works).

Within the analysis of Cope and Hofstadter’s written dialogue, one goal is see where these standards and definitions on art and creativity come into play. These issues touch equally on practical and philosophical considerations as the interlocutors attempt to argue and negotiate how creativity coincides with EMI’s abilities. The second goal is to see what role argumentation has within the dialogue.

**Virtual Music.** The ideas expressed within the previous section came together with the publishing of Cope’s book, *Virtual Music: Computer Synthesis Of Musical Style* (2001). Out of
the body of his published works related to EMI, recombinant music, and artificial intelligence, *Virtual Music* presents a dialogue among several notable contributors on the mechanics and implications of the EMI program.

The origins of the book actually come from a two day long colloquium held in 1997 by Douglas Hofstadter, in conjunction with the Center for Computer Assisted Research in the Humanities (CCARH) and Stanford University. The colloquium was a series of papers and lectures focused on Cope’s progress with EMI. Academics in music, such as Bernard Greenberg, Jonathan Berger, Steve Larson, and Eleanor Selfridge-Field, and cognitive scientists Daniel Dennet and Hofstadter, presented on various aspects of EMI, focusing on the authenticity of EMI’s compositions and creativity.

From the colloquium, the presentations informed contributions from these individuals for *Virtual Music*. The book is structured in two major sections. The first half of the book deals with the background and inner workings of the program, as well as a walk through of EMI’s compositional process. The second half presents chapters written by the various contributors, and Cope’s written response to these commentaries.

Given the breadth and depth of the book’s content, I have narrowed the scope of my analysis to focus on commentary from Hofstadter, and Cope. The choice of Cope is most logical given that he’s not only the creator of the program, but also the main interlocutor to Hofstadter. Hofstadter’s commentary, presented as the second chapter of the book (in addition to the other commentaries later on) corresponds to Cope’s in a written dialogue about EMI. Both commentaries address and respond to particular implications EMI creates. For example, the definition of style and creativity are a focal point of the commentary.
Coming from a background in computer science, and an interest in music and artificial intelligence in particular, Douglas Hofstadter provides a philosophical point of view on EMI within Virtual Music. Known for his work, particularly *Gödel, Escher, Bach: An Eternal Golden Braid* (1980), in cognition and artificial intelligence, Hofstadter’s experience with EMI includes a variety of lectures and writings wrestling with the implications of the program for music and creativity.

**Virtual Music and the Game.** This last section is meant to set the stage for my following analysis of Cope's second and third chapter in *Virtual Music*. Cope starts his book with a chapter dedicated to the basic history and foundation behind EMI and virtual music. As a term, the concept of “virtual music” serves as a central focus of discussion for both Cope and Hofstadter (as well as other contributors) throughout the book. As a result, the concept of virtual music is a logical starting place for discussion and analysis.

Within chapter one, Cope defines “virtual music” as a specific type of music that attempts to replicate musical style without note-for-note replication. The aim of virtual music is to produce new works in the “style of” other composers. This practice is often seen in music education where composers-in-training are challenged to mimic the styles and structures of collectively recognized “good” composers. A student may be asked to write a fugue in the style of Bach, thereby challenging the student to produce an original multi-voiced composition using the same stylistic conventions of Bach.

One important component of virtual music is the typical criteria for judging musical compositions. An early theme that comes out of my rhetorical analysis is the idea that musical works are sometimes judged in comparison to the works of the imitated composer. For example,
the student’s composition above may be graded in relation to original fugues composed by Bach himself. Within this comparison, possible standards of evaluation may be how “well” the new fugue sticks with the style and structure of Bach’s fugue, or how “well” the new fugue uses the stylistic devices (i.e. common “licks”) of Bach’s fugue.

Cope argues that the concept of virtual music has existed in a variety of forms throughout history. Cope cites instances of music, such as a figured bass or the Misukalisches Wurfelspiel (musical dice game), where musicians must compose (or improv) new music within certain constraints and structures. The figured bass, for example, determines the harmonic structure of a piece (i.e. the chords) that a musician may compose new melodies and themes over. Cope even mentions popular music as an example where melodies may be improvised in a constrained fashion depending on the chord structure or genre of the piece.

According to Cope, the similarities between all these examples is the dialectical relationship between constraint and freedom. In one sense, virtual music restricts musical creativity to a certain style and structure. At the same time, a great deal of freedom is encouraged in terms of how many notes are played at what time. From this dialectical relationship, new musical pieces may emerge that share some continuity with previous pieces in the same style. With the emergence of the computer, Cope highlights examples of computer generated virtual music. Along with EMI, the last fifty years have seen a variety of attempts of computer generated virtual music, such as in the works of Lejaren Hiller & Leonard Issacson, Iannis Xenakis, Kemel Ebcioğlu, Charles Ame’s, Ulf Berggren, Christopher Yavelow, Dominik Hornel & Wolfram Menzel.

After his discussion of virtual music, Cope shifts to his concept of “The Game” that
vaguely resembles a musical version of a Turing test. The Game is an activity where Cope plays musical pieces of a certain style, written either by a human composer, or EMI, for his audience. The audience is kept in the dark in regards to whether the played piece is human or computer generated until after they are given a chance to listen and guess. Cope explains that he takes a few steps to level the playing field with human compositions by taking out musical elements that EMI can’t produce such as dynamic markings, as well as picking pieces that aren’t easily identified by audience members.

The purpose of the game, beyond exposing EMI’s works to human ears, is to overcome the challenge Boden (2004) identifies with judging computer generated art. Specifically, listeners may be predisposed to a certain judgment if they know that the work is composed by a computer versus a human. Therefore, Cope attempts to avoid this challenge by keeping the source of the music a secret until the audience has a chance to listen and evaluate the work on the merits of its own quality.

From these two ideas (virtual music and the game), Cope concludes the first chapter and opens the door for Hofstadter’s commentary in chapter two. In chapter three, Cope returns to respond to Hofstadter’s commentary with a mix of questions, clarifications, and arguments that both support and challenge a variety of Hofstadter’s points. I will analyze Hofstadter's commentary and Cope’s responding commentary in the following chapters.
Chapter 3: Rhetorical Analysis

My goal for the following chapters is to apply a New Rhetorical and New Dialectical analysis to the text, and to synthesize a discussion of what the interaction of these two models reveal about the text, and argumentation analysis/critique in general. Similar to Walton’s distinction between arguments-as-product and argument-as-process, I structure my analysis to begin with the specific arguments followed by the larger discourse context.

At the start of this chapter, I apply the New Rhetoric framework to Cope and Hofstadter’s particular arguments. Given that Cope responds to Hofstadter within the text, the organization of my analysis reflects this structure. At the end of this chapter, I categorize these arguments into general themes of association/disassociation. In chapter four, I apply the New Dialectic framework to the dialogue between Cope and Hofstadter, as well as to the general themes I identify at the end of this chapter.

Rhetorical Analysis: Hofstadter

In this section, I analyze Hofstadter’s commentary by first summarizing the chapter. Second, I categorize several general themes of association and disassociation. I focus on Hofstadter’s poetic quatrains he argues with and identify various arguments of association and disassociation.

Creativity and EMI. In his chapter in Virtual Music, Hofstadter explores the notion of creativity in light of EMI’s capabilities through a variety of poetic quatrains that he argues are more adequate at expressing his concerns. I start with Hofstadter’s commentary because he provides ideas and arguments that Cope later responds to in the following chapter in Virtual Music. I have chosen to focus on these quatrains for the details rhetorical analysis since they
represent the primary form of argument within the text.

Hofstadter starts from the notion that creativity requires experience and emotion in order to create true works of art. He argues that music requires something beyond what Hofstadter refers to as musical syntax, or knowing the basic structures of the music. To Hofstadter, this extra component requires something as complex as the human brain (2001, p. 36). Whether it’s carbon or silicon-based, Hofstadter can “imagine silicon-based thought as easily as [he] can imagine carbon-based thought... emerging from electronic circuitry as easily as from proteins and nucleic acids” (p. 36).

From this basis, Hofstadter expresses his feelings of concern when first encountering EMI (2001, p. 38). He explains that before hearing EMI’s work, his initial reaction to the idea of computer-generated music was that the program dealt with surface detail of musical composition and that beneath the surface, the program lacked a deep, emotional substrate. However, upon playing a piece produced by EMI, he found “the piece seemed to express something” (p. 38). When exposed to a musical Turing test, where compositions by Bach and Chopin are played alongside original compositions by EMI, the music seemed genuine although glitchy to audiences (p. 52).

The result of the musical expression Hofstadter hears in EMI's work leads him to question “how [can] emotional music be coming out of a program that had never heard a note, never lived a moment of life, never had any emotions whatsoever?” (2001, p. 38). If musical works in the style of past human composers can be composed with the same level of authenticity by a computer without the complexity of the human brain, then the necessity of experience and emotion is questionable.
After his initial experience with EMI, Hofstadter put together a lecture that presented the mechanics and implications of EMI to various musical and general audiences (2001, p. 38). Through his lectures he found two key reactions from his audiences. First, a noticeable portion of audiences failed to recognize EMI-produced music when played alongside the original music of the imitated composers (p. 52). Second, despite this failure, Hofstadter notes “hardly anyone seemed upset at Cope's coup in the modeling of artistic creativity: hardly anyone seemed threatened or worried at all” (p. 39).

Ultimately, Hofstadter came to the realization that along with the concern of EMI’s implications on creativity, the acceptance of the quality of EMI’s work warranted further consideration of creativity itself. As a result, the rest of Hofstadter’s chapter in Virtual Music is spent musing about the nature of imitation and creativity, and the implications EMI creates for the original notion of creativity.

**Style and imitation.** Part of the challenge that EMI presents to Hofstadter lies in the philosophical consideration of EMI’s creative process, particularly concerning style and imitation. The very basis of EMI’s purpose, as described by Cope, is to imitate the styles of human composers, which is a practice often seen in formal music education for advanced students. In many ways, besides outputting musical scores, EMI also outputs the style of the original composer.

In Virtual Music, the quality of EMI’s imitation varies from composer to composer with varying degrees of success. For example, Hofstadter himself expresses a higher degree of approval for EMI’s Chopin-like works than the Bach-like pieces. Other descriptions of EMI’s work vary from similarities to freshman composition students, all the way to if the program was
NEW RHETORIC MEETS NEW DIALECTICS

finishing incomplete works by long dead composers (2001, p. 75). Despite the variety in
description, the common quality of EMI’s work is enough to provoke consideration of just how
the program can imitate a human composer’s style, without the mental processes of the human
mind.

In thinking about this issue, Hofstadter reflects on two notable ideas provided by
composers Bernie Greenberg and Lewis Rowell on the nature of style, creativity, and genius.
These ideas provide contrasting insight into not only what creativity involves, but also to address
EMI’s implications on creativity. Ultimately, these ideas influence Hofstadter’s concluding
concerns in regards to artificial intelligence and creativity.

To sound vs. to speak like Bach. In Virtual Music, Hofstadter remarks on one conversation
he had with composer and computer scientist, Bernie Greenberg, on the nature of imitating
someone’s style (2001, p. 53). To Hofstadter, Greenberg’s compositions in the style of Bach give
an authentic portrayal of the composer’s original style. Hofstadter goes so far as to comment that
listening to Greenberg’s music brings “the presence of Old Bach himself” (p. 53). When queried
about his “secret” to successfully composing in Bach’s likeness, Greenberg advances an idea of
“stylistic depth”.

Greenberg distinguishes two types of imitation: “sounding” like someone, and “speaking”
like someone. The music can simply sound like the work of another, or it can “speak” like the
composer in the sense that the music itself might have been made by that composer (2001, p. 53).
Expanding on this concept, Hofstadter explores the idea of a composer’s style as being layered
like an onion. On the surface, there are syntactical components to the style that defines a
composer’s music: preference of harmonic structure; rhythmical preferences; even signature
“licks” composers often use (p. 53). According to Hofstadter, it is only this surface detail that EMI can analyze and reproduce.

Going deeper, the inner layers of a composer’s style contain a deeper, virtually intangible “essence” (2001, p. 53). These layers extend all the way to the “core” of a composer’s style that speaks to the composer’s experience, emotion, and very soul. According to Hofstadter, the difference between the surface layers and inner layers corresponds with the difference between “sounding” like and “speaking” like the composer (p. 54). Creating imitations of one’s style based on surface, syntactical components results in a “shallow forgery” that may sound like the composer. On the other hand, being able to somehow mimic the inner aspects may result in a deeper work of art that “speaks” like the original composer as if directly communicating to the audience through the music.

This perspective on imitation shares a variety of undertones to Hofstadter’s original premise on creativity. Both share the quality of something beyond the mechanical reproduction of music and style. The inherent and deeper human qualities demarcate the “shallow forgeries” and “faithful reproductions” in somewhat intangible ways. More importantly, both ideas suggest that, at least at EMI’s current status at the time of writing, the program’s compositions fall in the category of “shallow forgeries” due to the program’s inability to truly have a human soul or experiences.

At the same time, Hofstadter leaves the door of EMI’s future progress open (2001, p. 54). Describing EMI as a “moving target”, Hofstadter re-articulates his original notion that computers may one day experience human experiences and feelings (once they achieve the complexity of the human brain) with the idea that an “ultimate EMI” will be capable of mimicking the inner
qualities of a composer’s style. Ultimately, the progression of EMI’s capabilities may dig deeper into the various layers of stylistic composition.

*Bach grammar:* A somewhat contrasting idea that Hofstadter contemplates comes from fellow music professor and composer, Lewis Rowell. In describing his own approach to stylistic imitation, Rowell describes the process of learning the “grammar” set forth by the composer. In regards to composing in the style of Bach, Rowell explains that:

“Bach developed a kind of grammar that I merely picked up, as could anyone who wished to. And then, armed with this grammar, I – just like anyone with a bit of musical talent – can easily compose any number of pieces in perfect Bach style. It takes no genius, believe me. It's all straightforward stuff.” (2001, p. 57)

While on the surface this idea would portray some qualities that may be interpreted as “shallow” in Greenberg’s perspective, Rowell preserves the aspect of creative genius by associating it to the act of creating a musical grammar (2001, p. 57). In this case, the creative product isn’t necessarily in the final product (a song) alone, but in the very grammar used in the process to create the final product.

Another way to interpret this idea comes from Greenberg’s metaphor of “speaking” like someone. Under Greenberg’s idea, the ability to speak like someone denotes a deeper understanding and practice of that someone’s inner stylistic qualities. Rowell’s idea avoids (but doesn’t deny) these inner qualities via the approach of musical grammar. The various experiences, emotions, and other immaterial qualities of the original composer that influences the music, influences the creation of their own musical grammar. Once the hard work of creating the grammar is completed, the task of learning and grasping the grammar is easy.
Limitations from mechanics. While addressing each idea, Hofstadter expresses possible implications on stylistic imitation for each. In both cases, Hofstadter considers the threat for “shallow forgeries” devoid of any corresponding emotional understanding/expression to be a large possibility (2001, p. 54). In Greenberg’s understanding of stylistic imitation, the metaphor of style as an onion reveals the disproportion between the larger surface layers, and the relatively smaller inner layers. Hofstadter believes that “it [the layered onion of style] suggests that you will get the most effect from the simplest and shallowest tricks.” (p. 54)

In a similar vein, the very nature of Rowell’s idea of musical grammar decreases the amount of work/degree of difficulty for stylistic imitation. According to both Hofstadter and Greenberg’s reaction to the idea (2001, p. 58), the musical grammar would be incomplete without some sense of the emotion and experience that influenced the original composer’s style. Once again, the possibility of shallow forgeries exist.

The possible implications ultimately lead Hofstadter to question the necessity of these inner stylistic components to begin with. Hofstadter opens up the possibility of a “pea-sized creative module” automatically active in the minds of artists and composers by citing examples of artists creating works of art long after their mental faculties had diminished (2001, p. 65).

The relation to this idea and the production of shallow forgeries remains unclear. Creativity as an automatic process seems to once again deny the necessity for human experience and emotion for making faithful stylistic reproductions. Hofstadter discusses the American painter Willem de Kooning who “by the middle of that decade [the 1980s] was in the fullest throes of Alzheimer's disease...” and was still painting works previous and new paintings (2001, p. 65). In the case of someone like William de Kooning, it is difficult to assess how a person with
a diminished ability of conscious sense making can still make meaningful works of art. Either the components of human experience and emotion are unnecessary to the process, or this automatic creativity module somehow accommodates those inner qualities at a subconscious level.

Pessimistic concerns. The underlying current of concern that Hofstadter expresses for all three ideas come at a head at the end of his chapter (2001, p. 79). Ultimately, the troubling aspect of computer simulation isn’t necessarily that the human creative process may be mechanical (i.e. a creative module), but that final products such as emotional works of music may be produced by things lacking the “intricate biological machinery” that gives rise to the “human soul”. In many ways, the aspect of creativity that is diminished by programs like EMI is the importance of inner human qualities.

Hofstadter concludes with a list of three ultimate pessimistic outcomes if the idea of creativity as an automatic process is accepted (2001, p. 80). First, various composers such as “Chopin (for example) [are] a lot shallower than I had ever thought.” Second, “Music is a lot shallower than I had ever thought.” Finally, “The human spirit is a lot shallower than I had ever thought.”

General themes. The overriding concern that Hofstadter consistently returns to for all three ideas is the idea of shallow imitation (2001, p. 80). Given his original notion of creativity as something that requires the deeper, human components such as a soul and emotion, the idea of composing without such components seems to be inadequate. The idea of the “shallow forgery” seems to communicate an inadequate failure to completely imitate a composer’s style. Given Hofstadter’s assessment of EMI’s compositional capabilities at the time of writing, the idea of EMI’s works as “shallow forgeries” may be one side of the coin in this case.
On the other hand, a variety of EMI’s qualities keeps Hofstadter from distinctly claiming that EMI’s output is nothing but trick and illusion. The potential of future growth for EMI seems to include the potential for faithful imitation (2001, p. 54). More importantly, the response Hofstadter and audience members have during the musical Turing test seems to suggest more than simple cheap forgeries are at work (p.52). The ultimate conclusion of these issues is left unresolved at the end of Hofstadter’s writing.

**Quatrains.** In his discussion of delivering presentations about EMI to audiences, Hofstadter expresses a response of slight frustration to the lack of concern from his audiences about EMI’s implications on music (2001, p. 39). Feeling that the clarity of his ideas and arguments may be lacking through traditional presentational means, Hofstadter uses the form of quatrains (four lines of verse) to introduce, summarize, and extend the ideas he discusses throughout the chapter.

The quatrains highlight the unique approach to communication that Hofstadter uses in numerous works (see Hofstadter 1979, 1981, 2007, 2009). From quatrains, to hypothetical dialogues, Hofstadter regularly uses poetic and narrative devices as a form of argumentation.

Overall, Hofstadter includes sixteen separate stanzas (units) of quatrains mixed throughout the chapter with his discussions on stylistic imitation. From this sixteen, I review and cite those most relevant to my major themes and analyze them in light of Perelman’s specific argumentation techniques. After the specific analysis of the quatrains, I return to the general discussion of these themes in relation to the corresponding analysis.

**Arguments By Association.**

“Is music a craft, / Or is it an art? / Does it come from mere training / Or spring from the
heart?

Is music just notes, / Merely patterns combined / By a cocktail-bar pianist / With a wandering mind?

Though Fats Wallers ticklin’ / Suggests profound joy, / Might it all be illusion / From a practiced riff-boy?

Does music, like poetry, / Cry from one’s core, / Or is it just splicings / Of licks, and no more?

Do the etudes by Chopin / Reveal his soul’s mood, / Or was Frederic Chopin / Just some slick 'pattern dude’?

Was Chopin a zombie with / The gift of piano gab? / Did he toss off mazurkas / Much as party bores blab?

Could he turn off his brain, / and continue to sing, / In true-heartrending fashion--- / Or would one miss some zing?

Was Bach a musician / Or mere Musikant? / Did Johann his passion / Express --- or just can’t?

In the furnace of Bach, / Did there burn a pilot light, / Or did Joh. Seb compose / On cool autopilot flight?

There’s music that’s trite, / And there’s music that’s deep---- / Or is that he truth? / Does all music come cheap?

Can one bypass the soul, / Can one sidestep all strife, / And produce wondrous music /
Without living life?

That’s the crux of my talk; / The idea, I hope, is clear / And until recently, / I myself had no fear.

A skeptic shot through, / But then one day I heard / Some not half-bad tunes / From a program. My Word!

So can style be learned / By mechanical means? / Can Rodgers be churned / Out by Hartless machines?

Soul-fire in Cole Porter / Began his Beguine; / Can we order more Porter / From a Coleless machine?” (p. 42)

Hofstadter’s first set of quatrains wrestles with the issue of the production of creative music from two opposing sources: deeper, inner qualities such as a soul; and automated surface qualities. The stanza doesn’t advocate any particular association for either source. From a surface glance, it’s difficult to say whether any arguments exist here at all. Hofstadter is questioning the source of creativity from well known composers such as Bach and Cole Porter. Such questions are closer to the process of exploratory stasis more than advocating direct claims.

Yet these questions also suggest possible associations between creativity and inner qualities/surface qualities. Depending on how these questions are answered, then new associations will be established. For example, if Bach composed on a “pilot light’, the answer suggests that his creativity came from the deep, intrinsic qualities of his style. On the other hand, if he composed on a “autopilot flight”, this answer associates his creativity with the mechanical qualities of his surface style.
“When music’s been treated / By the lives of David Cope, / Is the mystery banished, / Or
is there still hope?

Does true depth in music / Mean creating new styles, / So that music by mimics / Is worth
just snide smiles?

Was Chopin’s forth ballade / A mere splicing of licks / From his previous three-- / Or
were there new tricks?

What’s creative? What’s rut-stuck? / What is new, and what’s old? / What’s derivative?
What’s novel / What is weak, and what’s bold?

Is a style, once devised, / A mere snap to ad lib, / A bunch of new tunes, / Provided you’re
glib?

Is Bach-style a grammar / A hack can acquire, / Or is there some essence-- / Some deep
inner fire?

Just what makes a genius / Than a mimic far better? / The former forges spirit; / The latter
worships letter.

‘Twixt genius and mimic, / What makes the shape cut? / The former’s unfettered, / The
latter’s in a rut.” (p. 58)

Much like in the first set of quatrains, Hofstadter’s exploratory process of asking question
is highly featured in this quatrain. Once again, these questions suggest possible associations
between creativity and inner vs. surface qualities of style. The last few quatrains slightly diverge
from the rest by suggesting another value judgment on Hofstadter’s part. When asking if Bach’s
style is a grammar that can be acquired, Hofstadter’s usage of the word “hack” suggests a
negative connotation with the use of musical grammar. This value judgment suggests a disassociation that I discuss in the next section.

“If the basis of EMI / Turns out to be true, / Then all my dear notions / Will die; I’ll be blue.

Upon hearing an etude, / I’d no longer conclude / That I sensed a heart’s mood; / ‘Twas just some “pattern dude”!

Likewise Bach would be shown / To be one 'pattern guy,' / Whose secrets are none-- / At least not to EMI.

Are these two just shallower / Than ever I’d thought, / Their styles simply patterns / In EMI’s net caught?

Or is music itself / Just one big formal game, / So that using brute force / You can ape any name?

Or - worst of my nightmares - / Can a full human 'I' / Be stamped on a chip made / By VLSI?

Now don’t get me wrong-- / I maintain we’re machines! / But PCs?! What a slap / In the face to our genes!

Do our millions of genes, / And our billion-celled brains, / Yield nothing but rule-bound / Algorithmic refrains?

I’d like to believe / That for music to spring / From a thing, it must strive, / It must struggle, to sing.

It must search and must seek, / Sometimes win, sometimes fail; / It must fight with the
world-- / If that’s so, I’ll not rail.

What I fear is a win by / An emotional sham-- / A musical poet with / No sense of ‘I am’.

These issues alarm me / And that’s why I spoke-- / Not to answer all the questions, / But to prod and provoke.

And now, please excuse me / For all of my pranks; / And to Dave (and to EMI!) / I express profound thanks.” (p. 81)

The final set of quatrains expands Hofstadter’s concerns for the ultimate implications of computationally composed music (i.e. that music and genius composers are shallow), but also solidifies Hofstadter’s association with human complexity to true creativity. For him, the “emotional sham” of music can only be avoided by someone or something we the sense of “I am”. In other words, simple mechanics and surface qualities of style aren’t enough for “music to spring”.

**Denying Associations.** Several of Hofstadter’s quatrains deny or break particular linkages between two concepts. In this case, these arguments attempt to alter the structure of reality by denying certain associations.

“David Cope, a composer, / At UCSC, / Has a program make music / From SPEAC

Cope’s 'EMI' take scores / By, say, Bach--- scores of scores! / Then it scours these scores / For Bach-style 'signatures.'

From a 'style-free' scaffolding / (A pattern of 'SPEAC's) / The program hangs signatures / And lo! Old Bach speaks!

So is music an art, / Or is it merely a craft? / Remember at whom it was / That they all
laughed.

The proof’s in the pudding / (In this case, the ears): / If you’ve not heard EMI, / Don’t prejude it with sneers.” (p. 51)

Responding to the assumption that EMI’s music is automatically inferior due to the technological nature of the source, Hofstadter uses these quatrains to separate EMI from this assumption. The last quatrain in particular makes the argument that until EMI is heard, any existing assumptions (associations) with EMI shouldn’t be made. More importantly, the quatrain suggests that there is something different to EMI as the “proof’s in the pudding”.

“One mazurka by EMI / Has lodged, I confess, / In the grooves of my brain, / Causing shame and distress.

Like the proles in George Orwell’s / Nineteen Eighty-Four, / I find myself humming / An emotionless score.

I feel shock and bemusement / And confusion, to boot: / Is this rubbish I’ve swallowed / Am I that unastute?

I never did dream / I’d be mortified by / Merely humming some tune; / Now I eat humble pie.

After decades of sureness / That the pieces I hear / Are deep mirrors of passion, / Must I now reverse gear?” (p. 64)

Addressing the emotionless nature of EMI as a program, Hofstadter uses these quatrains to explore the implications of finding EMI’s music produce the same feelings and reactions in him as human composed music (i.e. humming the tune). In this case, the quatrains suggest the
denial of particular associations between the quality or authenticity of the music, and the mechanical nature of EMI. In particular, the idea that music is a “deep mirror of passion” might have to be reversed due to EMI’s work.

“There’re lots of old-timers / Who still can create; / But those with Alzheimer’s-- / Can their art be great?

De Kooning is brain-dead, / He paints as in sleep; / Yet critics acclaim him: / 'Great stuff-- makes you weep!'

Suppose that Old Chopin / Had lived to 89, / Losing all of his memory / As well as his mind.

Yet when he sad down / To make up a fresh tune, / His magical chords / Soon made listeners swoon.

What survived in his brain / Was the size of a pea--- / A module for composing / Autonomously.

When Chopin wrote waltzes, / Did he draw on all life, / Or could some 'waltz module' / Be excised with a knife?

Is composing a narrow, / Mechanical skill, / So ol geezers can compose / Using minds that are nil?

Is music, like chess, / A wee, hard-edged domain, / Algorithmically handled / By a pea-sized subbrain?” (p. 65)

Hofstadter, in establishing the idea of a “creativity module”, questions whether or not skills associated with conscious genius are more shallow and mechanical than originally thought.
If this turns out to be the case, then a separation between creativity and conscious genius is necessary to accommodate the mechanical characteristics of creativity.

“Suppose we discovered / A pristine Volume III / Of the 'Tempered Clavier.' / With the depth of JSB.

It makes a hug splash, / And musicians galore / Compete to perform it / In the grand halls of world o’er

It meets with reviews / That are tops. All agree / These are fugues without peer / 'Ach, it’s Bach-- only he!'

But for some, strange to say, / If Dave Cope were to spill / Bitter beans-- 'It’s y EMI'-- / Then its worth would be nil.

They’d retract all their praise, / No more sing its great powers, / For now its just fool’s old-- / Bouquets of fake flowers.

Musicians a-plenty / There are, who, if told / In advance, 'It’s by EMI,' / Will find flaws, Ain’t that bold?

But I fear that it’s not, / For it’s after the fact, / Forewarned 'It’s the en-EMI!', / They so 'bravely' attacked.

I find it more honest / If one’s judgment remains / Unswerved when one learns / It’s by chips, not by brains.” (p. 68)

Once again this set of quatrains returns to the suggested separation between EMI and the notion of inauthentically created computational music. The last two quatrains argue that the association of musical quality to the musical source (‘chips or brains’) is ‘dishonest’ in the
sense that such judgment is inadequate by Hofstadter’s standards. More importantly, even if this music produced was on the same scale as Bach himself, Hofstadter argues that knowing the music was computer made would derail an honest judgment. Therefore, EMI ought to remain separate not just from this “prejudice”, but in some ways from the “computer” label itself.

“If output from EMI / Fooled all but an elite, / To protest, 'Crux is missing!' / Would ring quite effete.

When the 'heart' that is missing / Is unmissed by most, / Then the essence that’s missing / Is a wisp of a ghost.

And this is my fear-- / That what’s missing will shrink / To near zero, with time. / And then-- what to think?

When music’s reduced / To the schemas of Cope, / Has the romance all vanished? / I would like to sing 'Nope.'” (p. 69)

A slightly different separation exist within these quatrains. Instead of suggesting that the quality of EMI’s work should remain separate from its status as a computer program, these quatrains suggest the “romantic” qualities of music itself should be separated from the mechanical means and schemas of production. An important implication arises from this kind of separation in that if romantic qualities are separated from mechanical means, then the perceptible worth of the music will remain despite the composer. In other words, “good” music will be good based on the quality of the music itself, not just the qualities of the composer.

“I suppose a good deal / Of my EMI perplexity / Can be traced back to issues / Of algorithmic complexity.
To cast all these matters / In a somewhat new light, / Let’s turn to attraction, / To chemistry, to 'Miss Right'.

I recall, and with pain, / A few times in my past / When I fell for some actress / In a romantic film’s cast.

The blips on the screen, / We all know, came from her-- / A flesh-and-blood person, / Alive sure as sure.

The image conveyed a full / Hum behind the scene, / And that’s what I fell for-- / Not for blips on the screen.

But now let’s imagine / A brave new film world / In which love scenes take place, / Both unboy’d and ungirl’d.

And how would this happen? / Quite simply-- by CAD-- / The faking of objects, / As in many an ad.

One sees things in motion / That in truth never were; / They’re simply bit-patterns / Cranked out in a blur.

Of course it’s one thing / To make balls bounce about; / Quite another, a person / To believe in, no doubt.

And yet we are marching / Down that very lane; / We’re making CAD filmstars. / Is that not a gain?” (p. 77)

The exploratory quatrains here question whether the aesthetic and emotional value depends on the mechanical means of production. Once again, this comes back to the idea of whether art can be separated from the means of production. Much like a computer program
making music, if digitized film stars were the next evolution of entertainment, would the emotional impact/value of certain movies be diminished?

**Arguments By Disassociation.**

“There are layers of style, / From the skin to the core, / The former are patterns: / The latter-- something more?

If style’s many layers / Are like circles that nest, / Then the one near the crux / Grow more tiny, I’m depressed.” (p. 55)

Returning to this particular set of quatrains, Hofstadter takes the unitary concept of “style” and suggests the idea that two different concepts are present: patterns and “something more”. The concepts correspond to Hofstadter’s claim that outer stylistic qualities include musical syntax and patterns, while the inner stylistic qualities include “something more” such as emotion and soul. More importantly, Hofstadter offers a value hierarchy by suggesting that the smaller the inner qualities get in relation to the outer qualities, the more depressed Hofstadter gets.

“When music’s been treated / By the lives of David Cope, / Is the mystery banished, / Or is there still hope?

Does true depth in music / Mean creating new styles, / So that music by mimics / Is worth just snide smiles?

Was Chopin’s forth ballade / A mere splicing of licks / From his previous three-- / Or were there new tricks?

What’s creative? What’s rut-stuck? / What is new, and what’s old? / What’s derivative?
What’s novel? / What is weak, and what’s bold?

Is a style, once devised, / A mere snap to ad lib, / A bunch of new tunes, / Provided you’re
glib?

Is Bach-style a grammar / A hack can acquire, / Or is there some essence-- / Some deep
inner fire?

Just what makes a genius / Than a mimic far better? / The former forges spirit; / The latter
worships letter.

‘Twixt genius and mimic, / What makes the shape cut? / The former’s unfettered, / The
latter’s in a rut.” (p. 58)

Much like in the first set of quatrains, Hofstadter’s exploratory process of asking question
is highly featured in this quatrain. Once again, these questions suggest possible associations
between creativity and inner vs. surface qualities of style. The last few quatrains slightly diverge
from the rest by suggesting another value judgment on Hofstadter’s part. When asking if Bach’s
style is a grammar that can be acquired, Hofstadter’s usage of the word “hack” suggests a
negative connotation with the use of musical grammar. In other words, using this grammar,
“anyone can do it”. Even further, the second to last quatrain directly asks what makes a genius
far better than a mimic. In this case, these questions offer a disassociation between “genius” and
“mimic”. Both are types of composers that create music, but one is valued over the other: a
genius is far better than a mimic because the genius “forges spirit” instead of “worships letter”.

“A teacher I know / Whom I asked to take part / In this meeting, said, 'No, / What I do is
no art...
I’ve nothing to tell folks: / I won’t take the stand, / It’s true, I write songs, / But they’re boring and bland...

You just name me a form / Such as 'march' and I’ll play / You a piece with a march beat, / Cliche after cliche...

All my songs are deriv--- / They’re in nobody’s style. / If I try copying Kern, / It comes out sounding Weill!

Still, old Irving Berlin / Has a style I might snag, / For his music’s as patterned / As a Scoot Joplin rag...

Berlin plays vanilla / To Kern’s chocolate mint; / So I might stamp out tunes / From that old Berlin mint...

But it’s truly a cause for despair / When you come to the genius of Kern. / He pulls magical chords from the air / With an ease too profound to discern...

Oh, I guess if I truly did yearn / To mimic the magic of Kern, / I could study and probe and might learn / Some tricks that make Kern phrases turn...

Then armed with this kernel of Jerome, / I might slowly begin out to churn / The patterns that once seemed so special-- / The signatures of the great Kern...

But even at that advanced stage, / Pulling wool over Kern experts’ eyes, / The flame of the novel I’d lack--- / Lacking genius, I’d just plagiarize...

No, the greatness of Kern I can’t ape; / He’s a doctor, I’m merely a quack. / And that’s why I wouldn’t belong / On a stage with you folks with the knack!” (p. 60)
This set of quatrains are told from the perspective of one of Hofstadter’s academic colleagues, Tom Lehrer, who he asked to contribute to a presentation featuring Hofstadter and Cope. The verses communicate another point of view enforcing the disassociation between mimic and genius. Here, the lack of genius defines the attempt of imitation as “plagiarism”.

Discussion.

The nature of associations/disassociations. Hofstadter’s use of associations and disassociations takes a slightly different, perhaps weak form of argument than a direct, rhetorical approach. Many of the associations and disassociations identified within the rhetoric are formed in a process discussing/questioning possible ideas and implications. In other words, some of the questions and possible answers presented in Hofstadter’s quatrains suggest particular associations or disassociations. Further into his chapter, some of these associations/disassociations are more directly expressed when corresponding to a value statement.

The unique aspect of these associations/disassociations within this particular case is that, to a degree, they break the Perelmanian mold. Arguments by association/disassociation within the traditional New Rhetoric framework are meant to persuade, or establish agreement with a speaker’s audience. In Hofstadter’s case, however, the presentation and use of these associations/disassociations lack the strength of overt persuasion. These connections are rarely directly stated in a manner that suggests that Hofstadter is attempting to advance a rhetorical argument. A few points within the chapter, Hofstadter is careful to establish a form of sense making and exploration as the purpose of his writing. Specific connections are still suggested, whether directly or merely implied through questions, that may ultimately define and shape the
Common themes. Through the rhetorical analysis, several common themes surface within Hofstadter’s rhetoric. These general associations/disassociations are present in and out of the series of quatrains. Within this section, these general themes will be established and discussed individually. The overall picture these themes create in tandem will be analyzed in later sections.

Themes of association. Three common themes of association can be identified within Hofstadter’s rhetoric. In general, all three themes relate to the idea of human creativity and, more specifically, stylistic imitation. Hofstadter uses a variety of terms to express the idea of multilayered style incorporating surface qualities (i.e. the syntax of one’s compositional style) and deeper core qualities (i.e. emotional experience or a soul). As well, Hofstadter uses the terms “genius” and “mimic” as labels for someone who creates authentic, original work versus someone who produce “copied” work.

The first theme attempts to associate creativity with either the inner qualities of style, or the surface qualities of style (Hofstadter, 2001, p. 42). Another way to interpret this association is to question whether composition utilizing the surface, syntactical qualities of someone’s style is “creativity in action”, or whether utilizing the inner, emotional qualities of style can be defined as “creative.” In this case, Hofstadter is attempting to establish a link between the idea of creativity and stylistic elements of composition. At the start of the his chapter, these possible associations are presented in an exploratory, questioning manner. However, Hofstadter’s preference for one association over the other becomes clear in relation to the other general associations within the chapter.

The second theme connects the ideas of inner qualities vs. surface qualities of style with
the labels of “genius” and “mimic” (Hofstadter, 2001, p. 58). Within his quatrains, Hofstadter associates someone who is a “genius” with the inner qualities of style. Practically, this could mean that someone who is a genius imitates style in a way that uses the inner qualities of emotional experience and the human soul. On the other side, Hofstadter associates someone who is a “mimic” with the surface qualities of style. In this case, mimics rely on learning the “grammar” or syntax of style to imitate style.

The final association links human complexity with authentic creativity and stylistic imitation (Hofstadter, 2001, p. 36). This association returns to Hofstadter’s concept of stylistic complexity: creativity being more than just syntax and grammar. In Hofstadter’s view, the complexity of something like the human brain is what is ultimately capable of utilizing and capturing the inner qualities of style. For example, early in the chapter he argues that a machine isn’t capable of truly experiencing emotion unless its sense-making process and capabilities match that of the human brain. Therefore, human complexity is linked to the inner qualities of style that leads to authentic stylistic imitation.

Themes of denying associations. The first theme attempts to break the typical association between compositional quality and the mechanism for composition. In EMI’s case, it’s easy to assume that the quality or value of the music is automatically diminished given the fact that it was composed by a computer. Hofstadter suggests a separation by holding to the point of view that the music must be judged on its own account (2001, p. 39). To summarize, Hofstadter argues that the music ought to be judged without prejudice.

The second theme encompasses a variety of separations that revolve around the idea of separating the romantic qualities of a musical piece with the means of composition. In one case,
emotion within the music is separated from emotion within the composer (Hofstadter, 2001, p. 69). In another case, creativity is separated from conscious genius (via the possibility of a “creativity module”) (p. 65). In general, this theme suggests a quality of music that is separate from the compositional means.

Themes of disassociations. Hofstadter offers two specific and separate arguments of disassociation. First, he argues that the unitary concept of “style” actually contains two distinct components in the form of a multi-layered onion: outer stylistic qualities and inner stylistic qualities (2001, p. 55). These qualities encompass different components of composition. The outer stylistic qualities contain structural elements, such as musical patterns. The inner stylistic qualities contain “deeper” elements such as emotional experience/expression, and human complexity/soul. In these arguments, Hofstadter expresses a value for inner stylistic qualities over the outer stylistic qualities.

Second, Hofstadter also distinguishes between a “genius” and a “mimic” under an unstated unitary term that can be described as a “composer” (2001, p. 58). Here, Hofstadter argues that several crucial differences exist between a genius and a mimic, such as mere imitation versus original expression. These differences carry particular value judgments when Hofstadter expressing that a mimic is nothing more than a “hack”. Therefore, Hofstadter expresses a value for a genius over a mimic. From this point, I turn to analyzing Cope's commentary.

Rhetorical Analysis: Cope

The following section follows the same basic structure where I summarize Cope's arguments in the third chapter of Virtual Music. Once again, I categorize several general themes
of association from the text. In comparison to my analysis of Hofstadter’s commentary, this section lacks a close read of quatrains (which are absent in Cope’s chapter), and a discussion of arguments of disassociation. In short, Cope’s argumentative approach lacks any disassociations where he attempts to distinguish previously unified concepts.

**Some basics.** In comparison to Hofstadter, Cope takes a rather direct approach in his stylistic dialogue. Whereas Hofstadter made prominent use of quatrains and questions to suggest and explore various associations and disassociations, Cope directly discusses and argues for specific associations or disassociations. In general, Cope’s rhetoric is less exploratory than Hofstadter’s in the sense that ideas and arguments are more “directed” than “suggested” within his dialogue.

Cope divides his third chapter into three sections and corresponding themes of responses to Hofstadter’s commentary. The first section, “Some Basics”, reflects on the technical understanding that Hofstadter demonstrates in his category of how EMI works at the mechanical level (2001, p. 83). Overall, Cope finds Hofstadter’s understanding to be accurate, but general. In particular, Cope identifies several differences in terminology such as when Hofstadter describes EMI’s creative process as “chopping up” music versus “recombining” music.

Cope also critiques some of Hofstadter’s terminology based on certain ambiguous terms (2001, p. 84). In particular, Cope challenges Hofstadter’s use of the term “emotion” (i.e. “emotional substrate” and “emotional emptiness”) when describing EMI and the resulting compositional works. To Cope, the idea of “emotion” is too vague to communicate any clear point or understanding. Cope extends this critique to Hofstadter’s conceptualization of “deep” and “complex” with “good” and “human” (p. 85) by arguing that “Surely simple things can also
be 'good' and 'human'.” In each case, Cope not only questions the specificity of each term, but also challenges Hofstadter’s association that deep stylistic complexities are necessarily required to have music that is “good” and “human”.

Another major theme in this section is Cope’s exploration of musical quality versus musical perception. On this front, Cope argues two important points. First, Cope agrees with Hofstadter on the idea that EMI’s music should be judged on the quality of the music itself, instead of the source of the music (2001, p. 85).

Second, Cope questions the idea that music itself is a communication medium for ideas such as human emotion and experience (2001, p. 86). To this point, Cope associates musical quality with human perception. The aspects that may make a piece “good” are prescribed by the listeners, instead of inherently or purposefully possessing these aspects within the music. This argument is central to Cope’s overall understanding of music and creativity in that music is meaningless until meaning is prescribed to it.

Finally, Cope extends this point of view to art outside of EMI’s work, and even music altogether. Cope mentions the computer program Aaron (2001, p. 86-87), that paints original works without any human interaction. From this example, Cope explains that his “relationship” with the computer generated art isn’t any different than human generated art. Aaron’s paintings still “speak” to Cope in similar ways because the emotional and aesthetic qualities that the paintings possess are from Cope’s own perception of the art.

This specific extension is important since, if accepted, Cope’s argument allows him to separate himself from any bias that may be ascribed to him at the creator of EMI. This argument challenges the notion that Cope experiences EMI’s work on the same level as human generated
music because he created the program, and therefore is a biased source of judgment. In this case, Cope is attempting to demonstrate that this trend of judgment is consistent in other instances of computer generated art.

**The source of frustration.** Within his second section, Cope expands on his musical perception argument even further. Here, he argues that the source of Hofstadter’s expressed frustration may be misplaced (2001, p. 88). According to Hofstadter, a certain degree of frustration is experienced from the idea that he sometimes experiences EMI’s works with the same level of emotion and feeling as human composed music (2001, p. 80). Hofstadter expresses a concern that this may indicate that such musical qualities are rather shallow and easy to fake or mimic.

In response, Cope argues that Hofstadter may be focusing on an incorrect source of musical “depth” (2001, p. 88). Whereas Hofstadter associates musical depth with the music or composer (i.e. what ultimately makes a piece “deep” is either something in the music itself, or from the composer), Cope argues that the source of this depth is in the perception of the piece itself since “Listeners obviously play a significant role in the musical experience. More than that, however, listeners play a primary role in this experience.” (p. 88) Once again, a piece is only “deep” or “emotional” because listeners experience the music as such. Cope extends this argument even further by associating musical genius and greatness with human opinion. What makes any music “great” is because people say it’s “great”.

**Soul.** Cope concludes the third chapter by offering alternative solutions to Hofstadter’s expressed frustration. In part, Cope applies his musical perception argument to Hofstadter’s concern about the lack of depth in “20,000 lines of code” that makes up EMI’s existence (2001,
p. 90). On one hand, Cope argues that music is just as “meaningless” when notated on a piece of paper. At the same time, Cope also suggests that it’s possible to perceive meaning and greatness in the aspect of human labor. In this case, music can be meaningful from the countless hours of work it takes to produce. EMI’s “20,000 lines of code” can be seen in a similar light in the sense that the code took Cope’s labor and creativity to birth.

In terms of music having a sense of a “soul”, Cope argues that the typical definition of “soul” requires three components: life, being human, and possessing something “outside” of the physical (2001, p. 91). Under this definition, computers are logically excluded from having a soul since they are neither alive, human, nor separate from themselves. At the same time, Cope argues that “the bigger question for me, however is not whether Experiments in Musical Intelligence compositions have soul but whether human compositions have soul” (p. 91), Cope argues that any association with human composed music and “soul” as a component of stylistic depth can’t be made based on this definition of soul. For example, Cope remarks that “With such a vague definition of soul, I cannot see anyone arguing convincingly that the notes gathered on a page of music contain in them a 'principle of life, feeling, thought, and action. No, the soul we perceive when we hear a deeply moving musical work, if 'soul' is even the right word, is our own soul” (p. 91).

Finally, Cope argues that “I believe the fact that we cannot, in general, recognize the difference between a machine-created and human-created work of art means that the program uses processes that in some ways mirror those used by human composers.” (2001, p. 91) This associates the two different creative processes in a way where both are valued equally. If this association holds, then the musical products of both allow for the same interpretive possibilities.
Since human or a computer composed the music is produced in similar ways, the music itself can still be valued as “good”, “deep”, “emotional”, etc.

Discussion.

Common themes. Once again, several themes of associative arguments appear in Cope’s response chapter to Hofstadter’s rhetoric. The following section will specifically focus on Cope’s arguments within the third chapter. References to Hofstadter’s arguments (i.e. Cope’s direct response to Hofstadter’s arguments) are made where necessary, but a more thorough analysis of the overall dialogue between the two is made in the following chapter.

Themes of association. Within Cope’s third chapter, two themes of association exist that incorporate three of the arguments identified in the previous section. In this case, the three arguments build off of each other as Cope extends his notion of musical perception as the source of musical depth. As well, all three arguments are direct responses to Hofstadter’s discussion on depth, complexity, and musical quality.

The first theme focuses on Cope’s idea that the source of Hofstadter’s musical depth is musical perception (2001, p. 88). This theme associates the musical complexity and depth of individual pieces and compositional style with the values and perceptions of listeners. Cope’s argument that simple music can be just as deep as complex music relies on the idea that depth isn’t associated or influenced by the music itself (p. 85). Within the chapter, Cope argues that music itself is emotionless until a listener experiences an emotion in relation to the song.

This theme also covers Cope’s direct arguments in the “Soul” and “The Source Of Frustration” sections regarding Hofstadter’s frustration about having an emotional experience to emotionless computer music. Once again, this associations enables individuals to experience and
perceive depth in music generated by “20,000 lines of code” since such depth doesn’t hinge on the music or its source.

The second theme comes from Cope’s argument regarding the compositional processes of human and computer composers (2001, p. 90). Here, both practices are associated with similar, if not the same compositional process. The implications of this theme is two fold. First, by associating EMI’s compositional practice with a similar process to human composition, Cope enforces his argument that EMI’s work ought to be judged without prejudice against its technological nature. This associations helps to separate EMI’s technological properties from the quality of its music. Second, this theme reveals Cope’s central argumentative theme within his rhetoric.

Cope views the human creative process as potentially being a mechanical process (2001, p. 91). In many ways, this view corresponds to Hofstadter’s expressed concern that music is shallow nature, but Cope avoids this concern with his argument of musical perception as the source of musical quality. Cope even argues that composers can still pour their emotion into the music, even though this action won’t have any literature effect on the quality of music itself. As a result, this forms a second association throughout Cope’s discussion. While Cope associates both human and computer composition practices to a similar compositional process, the second association takes this a step further by associating this process with the mechanical qualities of recombinant music.

*Themes of denying association.* Cope’s arguments suggest two themes of denying association within chapter three. Both themes incorporate or rely on Cope’s argument that musical quality is determined by musical perception in different ways.
The first theme is similar to Hofstadter’s separation of EMI’s technological properties and the quality of its music compositions (2001, p. 39). Cope affirms this separation by agreeing with Hofstadter’s commentary on the subject, and discussing his own approach to evaluating art independent of the artist (p. 85).

In general, Cope separates any possibility of prejudice from evaluating products of the artistic process. Cope, specifically, seems to apply this separation to any art, not just EMI’s work, such as in his discussion about Aaron (2001, p. 86-87). In effect, this allows Cope to maintain this separation without being labeled as being biased as the creator of EMI.

The second theme within Cope’s discussion works in tandem with his association between musical quality and perception. In the “Soul” and “The Source Of Frustration” sections, Cope associates the quality of music in terms of depth with how listeners perceive the music (2001, p. 88). In order to argue this association, Cope must first break the association Hofstadter originally suggests between musical quality and stylistic depth.

This theme includes the variety of arguments Cope makes regarding the false idea that music is anything more than mechanical without human perception (2001, p. 90). In one form or another, each argument advocates the separation of musical complexity Hofstadter describes in chapter two, and the creative depth present within Hofstadter’s multilayered notion of style. Cope’s argument that simple music can also be deep also contributes to this separation by providing an alternative possibly to achieving the depth Hofstadter describes (p. 85).

In many ways, this separation is the keystone of legitimizing EMI’s work. Beyond simply making room for Cope’s association between quality and perception, this separation levels the playing field between human and computer creative processes. It establishes a reality where
computer generated music still has the possibility of musical depth since depth and process are separate.

**Moving Forward**

So far, I have analyzed the second and third chapter in *Virtual Music* for specific arguments of association and disassociation. From these specific arguments, I classify general themes of argument that I use in the next chapter to analyze at a contextual and structural level. These general themes are important since they provide an overall roadmap of the exchange between Cope and Hofstadter. The general claims, ideas, and concerns become clear at this abstracted level. From this point, I assess the overall type(s) of dialogue and chains of reasoning these general arguments suggest based on Walton's (1999) New Dialectic framework.
Chapter 4: Dialectical Analysis

With my rhetorical analysis complete, my next step is to apply the New Dialectics framework to the general argumentation themes I have identified, and to the general exchange between Cope and Hofstadter. My overall goal in this section is to analyze the argumentation process that Hofstadter and Cope engage in through the first three chapters in *Virtual Music*. So far, I have analyzed and classified various themes of association and disassociation, but this step only addresses the arguments as products. In accordance with the New Dialectics framework, further insight will be gained through an analysis of the argumentation process.

In this chapter, I begin with an analysis of the overall role of reasoning at work within the discourse. From there, I identify the type(s) of dialogue that will ultimately inform and influence aspects of the arguments. Finally, I further analyze the argumentative themes as schemes within the dialogue.

Dialectical Analysis

**Adherence and commitment.** My first step in this section is to address the critique on New Rhetoric’s assumption of adherence. This critique calls into question whether persuasive adherence is the primary goal of A. either Hofstadter or Cope, and B. the greater dialogue at hand. In other words, should this analysis assume that rhetorical reasoning is the underlying mechanism that Hofstadter and Cope are using in order to gain the adherence of the other? Is Hofstadter attempting to primarily persuade Cope of the ultimate implications EMI’s creative process has on creativity? Is Cope attempting to primarily persuade Hofstadter of the perceptual source of music’s romantic qualities?

Based on the analysis so far, my answer to these questions is varied. In some arguments,
depending on how direct the claims are, it is fairly straightforward to interpret the argument as pursuing adherence. For example, both Hofstadter and Cope clearly argue (and agree) on the point that the quality of EMI’s music should be separated from the mechanical nature of the program itself. In other arguments, where the claims aren’t as direct, it is difficult to assume that the pursuit of adherence is at work. Hofstadter’s process of questioning exemplifies this issue since these questions merely suggest possible arguments. Much of Hofstadter’s commentary is exploratory near the start of the chapter that ultimately leads to his final three concerns.

**Argument analysis.** Walton (1999) lays out a process for analyzing and evaluating arguments under the New Dialectics framework (p. 88-89). The first and second steps are to identify the types of dialogue and argument themes. From this point, each argument is broken down into the basic elements of premises, inferences, and conclusions. Walton's framework provides further insight in two key areas. First, it lays out six types of dialogue that argumentative situations may encompass. As I discuss in the first chapter, each particular situation may include elements of many dialogue types. For example, the overall focus of a dialogue may shift from persuasion to negotiation, or even include both types at the same time.

Second, Walton's framework attempts to map out “chains of reasoning” by identifying or constructing three different components of each argument: premises, inferences, and conclusions. The overall chain starts with accepted claims or ideas (premises), and moves towards new unaccepted conclusions. In order to bridge the gap between what has been accepted (premises) and what remains to be accepted (conclusions), certain reasons or assumptions must be made (inferences). These inferences may be stated (i.e. when a speaker says “why” the conclusion is acceptable), or simply assumed as common “sense” or “knowledge”.
My analytical process that follows is two fold. First, I review the general dialogue between Cope and Hofstadter, and attempt to identify the particular types of dialogue at work. Second, using the premise/inference/conclusion model, I construct each general argument of association/disassociation as a chain of presumptive reasoning. Here, I identify the starting points of agreement between Cope and Hofstadter, the associative/disassociative conclusion each argument makes, and attempt to “fill-in the blanks” with reasons (inferences) either directly stated or that must be assumed in order for the particular chain to work.

One analytical choice I have made is the preference of commitment over adherence. I do this in order to avoid New Rhetoric’s conceptual challenge of persuasive intent I discuss in the first chapter. Walton’s framework avoids the assumption that argumentative persuasion is always the goal of the arguer or overall dialogue. The idea of rhetorical reasoning and persuasion isn’t necessarily rejected within Walton’s framework. Instead, it is focused to a particular type of dialogue (persuasion). Therefore, while I use the notion of commitment over adherence, persuasive goals are still present.

One of the difficulties when discussing the concept of reasoning is to determine what the word itself refers to. The psychological processes of each contributor is beyond the scope of Walton's framework and this analysis. However, both the rhetorical and presumptive reasoning processes are as much interpretive as they are descriptive. In other words, it’s possible to interpret the discourse based off of certain aspects and properties that the analytical framework can accommodate. In Cope and Hofstadter's dialogue, persuasion plays an important role, but not necessarily a central role. Later on, I demonstrate how, based on the content and strength of the arguments, type of dialogue is multifaceted in Cope and Hofstadter's commentary.
My task is to apply the conceptual reasoning processes both frameworks suggest (rhetorical and presumptive) to the text. The preference of commitment over adherence is partly influenced from my overall analysis of the discourse itself. The nature of the discourse, situated in a book featuring various commentaries from various academics and musicians, suggests that other types of dialogue are present. I expand on this notion in the next section, but for now this alone suggests that the presumptive reasoning at work within each commentary will vary. Hofstadter’s commentary in particular is a good example of this.

Part of the overall purpose of the book is to serve as a reflection and record of the preceding symposium. Symposia in general are events that invite a multitude of perspectives, opinions, and ideas with the desire for active discussion and possible debate. They are often dialogical in nature in that active discussions and panels coexist with traditional presentations. Persuasive goals (i.e., arguments that make a clear, direct attempt of persuasion) can coexist with dialectical or logical goals.

The nature of the symposium seems to be reflected in the book itself. Cope spends some time establishing the foundations of the program, and his exchange with Hofstadter establishes certain topoi for others to further refine. From these starting points, the other contributors analyze and discuss various aspects or implications associated with EMI in a manner that is more dialogic than rhetorical. In the end, Cope spends some time briefly responding to each contributor before focusing on the future of EMI. Within this portion, his response is often similar to his response to Hofstadter: there is a mixture of agreement, clarification, rejection, and exploration.

Given the breadth of possible intents/goals for each participant and the discourse overall,
Walton’s notion of presumptive reasoning is a good fit for analytically measuring how arguments operate within the given type of dialogue. Walton says that “Presumptive reasoning is always based on default by an argument from ignorance that tilts a burden of proof one way or another on an unsettled issue.” (1999, p. 72) Presumptive reasoning relies on the idea of accepting certain premises and claims to commit to certain conclusions. Walton explains that:

“Presumptive reasoning works by making a guess, in the form of drawing a conclusion and accepting it on a tentative basis, subject to possible retraction as a commitment, should new argumentation alter the case. A presumptive inference gives an arguer a reasons for accepting a conclusion, even though that conclusion may later have be withdrawn if critical questions are asked in the dialogue.” (p. 73-74)

Commitment itself can be a measure of both strength and position. On one hand, a particular argument may suggest a certain level of commitment for participants. This may explain the difference between direct, persuasive arguments (intending a high level of commitment) and exploratory, questioning arguments (intending a low or varied level of commitment.

On the other hand, the level of commitment may be expressed by participants themselves. For example, both Hofstader and Cope express a high level of commitment to the argument that EMI’s work ought to be judged free from technological prejudice (2001, p. 51 & 85). This measure of commitment is an indirect way of measuring the internal mental reasoning of each participant, but more importantly, it is also a measurement of an argument’s “success”. By expressing a degree of acceptance or rejection to another’s idea/argument, each participant indirectly expresses the effectiveness of the argument. An argument with a high intended level of
commitment may “fail” if the participant’s level of resulting commitment is low, or vice versa. On the other hand, an argument with a high intended level of commitment may “succeed” if the participant’s resulting commitment matches what is intended.

Within the discourse, presumptive reasoning and commitment play a variety of roles within the argumentation process. My analysis demonstrates that the intended levels of commitment each argument calls for varies in terms of strong or weak arguments, as well as the participant’s expressed level of commitment to some of the conclusions. As well, I demonstrate that the various types of dialogue at play also require or suggest a particular level of commitment. Finally, my detailed analysis of each argument theme demonstrates how presumptive reasoning is influencing intended and expressed commitment within the discourse.

Types of dialogue. From my analysis so far of the different arguments of association/disassociation, it is clear from the start that overall discourse is complex. Walton (1999) accounts for this complexity with his notion of dialectical shifts, where the type of dialogue shifts throughout the discourse. He also admits that each type of dialogue may coexist with the others in a complex, “messy” discourse. This implies that any discourse has a certain limit of abstraction: the complex twists and turns of communication will only neatly “fit” into these abstracted types of dialogue so much.

There are three types of dialogue at work in Hofstadter’s and Cope’s exchange. Some of the argumentation themes suggest a persuasive type of dialogue. Hofstadter and Cope’s agreement on properly judging EMI’s work is one such theme (2001, p. 51 & 85). Both individuals make persuasive arguments for this concept in the attempt to resolve the issue of dismissing EMI’s work.
Hofstadter’s exploratory arguments, such as associating creativity with the various levels of one’s style, are a bit more difficult to classify. On one hand, these arguments can be seen as persuasive in the sense that Hofstadter is clarifying certain issues such as the ultimate implications of EMI’s presence and work. On the other hand, these arguments also fit within an information-seeking type of dialogue. Here, Hofstadter typically uses questions to clarify certain concepts such as “style.” These exploratory arguments thus suggest information-seeking as another type of dialogue. For example, Hofstadter's quatrains contain questions such as:


These questions set Hofstadter up to seek the corresponding answers through the rest of his commentary.

Finally, some of Cope’s commentary is also ambiguous in the sense of incorporating persuasive elements with other intentions. For example, his association with the romantic qualities of music and musical perception is a persuasive argument asking for a certain level of acceptance (2001, p. 54). At the same time, the argument itself is responding to Hofstadter’s concern that EMI’s work implies that music itself is shallow. In this light, this association seems to also be an attempt of negotiating Hofstadter’s concern and Cope’s commitment to the idea of composition being a mechanical process. Therefore, negotiation is the third type of dialogue.

I have ruled out the other types of dialogue primarily because they don’t amount to major themes within the discourse. That isn’t to say that inquiry, deliberation, and eristic types of discourse aren’t present. It simply indicates that A. the argumentative themes I have identified don’t suggest these types of dialogue, and B. the overall communication between Hofstadter and
Cope doesn’t seem to be influenced by these types. For example, even though some comments are made to inquire about a certain idea or hypothesis, the overall purpose of the dialogue between Hofstadter and Cope isn’t to prove or disprove these ideas. This purpose also doesn’t seem to include the goal of coordinating action/determining the best course of action (deliberation), or hitting out opponents/revealing deeper issues (eristic). My analysis in the next section demonstrates and refines these dialogic types by focusing on how presumptive reasoning is facilitating commitment within each argument. The use of reasoning is different depending on the type of dialogue, which ultimately influence the form and purpose of each argument theme itself.

**Premises.** In combination with Perelman’s notion of starting points of agreement, and Tindale’s (2006) interpretation of these as premises, my first step in this section recognizes that each argument theme must draw from a common group of premises. In reality, these premises are the stated agreements between Hofstadter and Cope. In order to determine these points of agreement, I draw primarily from Cope’s commentary as a response to Hofstadter. His position within the textual sequence allows Cope to agree, disagree, or question Hofstadter’s ideas. Hofstadter also includes a few points of agreement in response to ideas purposed out of text as well.

The points of agreement between the two participants can be divided into two general categories. The first category is concerned with EMI. Both participants agree on a number of points, such as the uniqueness of the program; how the work ought to be judged; and the progressing nature of the program. In short, these points of agreement can be summarized as:

- EMI is composing in the style of various composers (p. 38 & 83)
• EMI’s compositional process is a mechanical process (p. 44-50 & 84)
• The quality of this work is unique in that it can fool audiences in the musical Turing test (p. 52 & 85)
• Judging the quality of this work should be separate from the technological nature of EMI (p. 39 & 85)
• EMI is an evolving/moving program. (p. 54 & 91)

The second category is concerned with the romantic qualities of music. Here, both participants recognize that music, creativity, or the human soul can possess more than mechanical processes. These points of agreement can be summarized as:

• Romantic qualities of music (soul, emotion, experience) can be experienced by the audience. (p. 36-37 & 88)
• Music can contain meaning/Composers can consciously and subconsciously invest what they've heard and understand about music. (p. 36-37, 73, & 88-89)
• The human soul/mind is a deep thing. (p. 80 & 90-91)

From these seven points of agreement, Walton (1999, p. 89) describes the next step of the process as examining “each inference in the chain of reasoning”, or to basically determine the components of the argument that facilitate commitment from premise to the conclusion.

One final note: while many of the arguments are made from these points of agreement, one type of association within the New Rhetoric framework questions the role of agreement. Establishing the structure of reality, either through relations of succession or coexistence attempts to create new agreement where none exists before. If agreement is only established after the association is made, then these arguments will logically lack any premises within the
argumentative framework. The rest of my analysis focuses on how each participant constructs either expressed or implied inferences for each general argument found within my previous analysis.

**Inferences and conclusions.** Once again, New Rhetoric makes a contribution to my analysis by classifying what may be interpreted as the conclusion or claim of any given argument. Much like agreements between participants may be treated as premises, the ultimate associations/disassociations found at the core of each argument may be treated as conclusions. The rationality for this lies with the similarities between commitment and adherence. Both of these concepts involve conditionally accepting the ultimate claim of an argument. Within New Rhetoric, the ultimate claim is typically the argued association/disassociation itself. Therefore, these claims conceptually serve as the conclusion for the argument that participants may or may not commit to in varying degrees.

For the final portion of my analysis, I identify inferences for each general argument present within the text. I draw from the “textual and contextual evidence” (Walton, 1999, p. 89) that can be applied to the abstracted arguments. Given the scope of my project, I refrain from evaluating the quality of the argument or process since my purpose is to reveal/analyze instead of critique the underlying reasoning processes.

I take each argumentative theme I previously identify from the text and construct a diagram containing premises (P) from the points of agreement I identify above, conclusions (C) claiming a particular association, denying an association, or establishing a disassociation, and direct or assumed inferences (I) that are required in order to complete a chain from the premises to the conclusions. For each argument, a chain of reasoning should form that demonstrates how
the reasoning leads from the agreed starting point to the final conclusion of association/disassociation.

**Hofstadter's arguments.**

**Association of creativity/inner qualities vs. creativity/surface qualities**

I1: Soul, experience, and emotion are components of one's stylistic inner qualities.

(Hofstadter, 2001, p. 54)

I2: Soul, experience, and emotion define creativity.

C: Creativity and inner stylistic qualities are associative ideas.

I1: Patterns and mechanical syntax are components of one's stylistic outer qualities.

(Hofstadter, 2001, p. 54)

I2: Patterns and mechanical syntax define creativity.

C: Creativity and outer stylistic qualities are associative ideas.

In these two exploratory associations, Hofstadter argues that creativity and either inner or outer stylistic qualities can be associated. Hofstadter’s reasoning relies on the inference of either romantic qualities or mechanic qualities to A. serve as stylistic components, and B. define creativity. These associations lack any premises, which suggests an association that establishes agreement (reality in Perelmanian terms) since nothing currently exists in the agreed upon reality between the interlocutors that suggests romantic/mechanic qualities and creativity are linked concepts. In this case, these qualities are the common link between creativity and stylistic
qualities: if one commits to the inferences, then the commonality is acceptable as an association. The reasoning suggests that creativity and inner or outer stylistic qualities can be associated since “soul, experience, and emotion” are the common bond that either define or makeup these two concepts.

**Association of genius/inner qualities & mimic/surface qualities**

1. Soul, experience, and emotion are components of one's stylistic inner qualities.
   (Hofstadter, 2001, p. 54)

2. Soul, experience, and emotion define a genius. (p. 58)

C: A genius and inner stylistic qualities are associative ideas.

1. Patterns and mechanical syntax are components of one's stylistic outer qualities.
   (Hofstadter, 2001, p. 54)

2. Patterns and mechanical syntax define a mimic. (p. 58)

C: A mimic and outer stylistic qualities are associative ideas.

Hofstadter's argument here is that a genius uses inner stylistic qualities, while a mimic uses outer stylistic qualities. Much like the previous two associations, these associations rely on a the commonality of either romantic or mechanical qualities to define A. components of style, and B. genius or mimic. The lack of any prior agreement on what makes a genius or a mimic suggests an argument that establishes agreement through commitment instead of relying on agreed upon premises. This chain of reasoning suggests that genius and inner stylistic qualities
can be associated since “soul, experience, and emotion” either define or makeup these two concepts. Mimic and outer stylistic qualities can be associated since “patterns and mechanical syntax” define or makeup these concepts.

**Association of human complexity to compositional authenticity**

P1: The human soul/mind is a deep thing

I1: Human beings are complex mechanisms (Hofstadter, 2001, p. 81)

P2: Music can contain meaning/Composers can consciously and subconsciously invest what they've heard and understand about music.

I2: Complexity is required to understand and communicate life and experience (p. 36)

I3: Music that doesn’t communicate life and experience is an emotional sham (p. 81)

I4: Music that communicates life and experience is authentic

C: Complexity and musical authenticity are sequentially associative ideas (Complexity is required for musical authenticity)

Overall, this association appeals to reality through two points of agreement: the human soul/mind is deep, and music can contain meaning. The argument attempts to conclude that complexity is somehow required for musical authenticity. Hofstadter makes this argument by linking these premises through the notion of complexity. The first premise and inference establish that humans are complex. The second and third inferences establish the need for complexity in order to avoid music being a musical sham. The final inference is an assumption derived from the third: if music that doesn’t communicate life and experience is an emotional
sham, then the opposite must lead to authenticity. From this reasoning, complexity (something that humans have) is a direct cause of musical authenticity through the capacity to experience and express life.

**Separation of compositional quality/compositional mechanism**

P1: The judging the quality of this work should be separate from the technological nature of EMI

I1: No inference is needed since this is an agreement

C: The judging the quality of this work should be separate from the technological nature of EMI

This separation stands alone as a point of agreement. In other words, since both Hofstadter and Cope express this argument (as well as agreement with the argument), no further argument is required.

**Separation of romantic qualities/compositional means**

P1: Romantic qualities of music (soul, emotion, experience) can be experienced by the audience

P2: Music can contain meaning

I1: Computers can write emotional music without experiencing emotion (Hofstadter, 2001, p. 81)

I2: Creativity is an automatic process of the brain (p. 65)
I3: Meaning can be created without being imbued into art (p. 77)

C: Soul, experience, and emotion, and the means of composition are separate ideas.

This exploratory separation works against previous agreement (the premises) by inferring that computers are capable of creativity. The first inference denies the uniqueness of creative composition to humans by suggesting that computers can also write emotional music without emotional capacity. The second inference further reinforces this idea by suggesting that creativity is a mechanical, automatic process. Finally, the third inference limits the importance of the art itself as a “vessel” of meaning. This argument concludes that meaning (i.e. soul, experience, and emotion) can be experienced even when the means of composition is mechanical and computational.

**Disassociation of inner stylistic qualities/outer stylistic qualities**

P1: A composer’s style creates music

I1: Inner stylistic qualities contain soul and emotional experience/expression

I2: Outer stylistic qualities contain musical patterns, structure, and syntax

I3: The use of inner stylistic qualities when composing leads to more authentic, deeper music

C: Inner stylistic qualities should be valued above outer stylistic qualities

Hofstadter starts this argument from the generally accepted idea that a composer's style is connected in the creation of music. He takes the unitary term of style and divides it into two specific components: inner stylistic qualities and outer stylistic qualities. Finally, Hofstadter
claims that inner stylistic qualities ought to be valued above outer qualities. The first two inferences define these qualities based on emotional experience or musical patterns to help make these terms distinct. The third inference makes the disassociation by inferring that “better” music is achieved when composed from inner stylistic qualities.

**Disassociation of genius and mimic**

- **P1:** A composer creates music
  - **I1:** A genius creates expressive, original music
  - **I2:** A mimic creates poor imitations of music
  - **I3:** Expressive, original music is preferable to poor imitations of music
  - **C:** Geniuses should be valued above mimics

Similar to before, Hofstadter starts this argument from the generally accepted idea that a composer is connected in the creation of music. He takes this unitary idea and divides it into two specific types: genius and mimic. Hofstadter argues that geniuses ought to be valued above mimics. The first two inferences define these types based on original music or poorly imitated music to help make these terms distinct. The third inference makes the disassociation by inferring that more expressive music is created by geniuses instead of mimics.

*Cope's arguments.*

**Association of musical depth/greatness and perception/human labor**

- **P1:** Romantic qualities of music (soul, emotion, experience) can be experienced by the
audience

P2: Music can contain meaning

P3: Composers can consciously and subconsciously invest what they've heard and understand about music

I1: Listeners play a primary role in prescribing meaning/depth to a song/composer (Cope, 2001, p. 88)

C: Musical depth/greatness and perception/human labor are associative ideas

The starting points of agreement (premises) in this argument all preserve the notion that music can be meaningful. Cope attempts to conclude that musical depth/greatness is defined by human perception or labor. Cope’s inference here transfers the source of this meaning from something inherent in the music, to human perception. This inference suggests that the emotion audiences experience, or the value composers/listeners hear in music all come from a perceptual source.

**Association of simple and good/human**

P1: Romantic qualities of music (soul, emotion, experience) can be experienced by the audience

I1: Simple things can be “good” and “human” (Cope, 2001, p. 85)

P2: Composers can consciously and subconsciously invest what they've heard and understand about music

I2: The labor composer’s put into the “instructions” of music (i.e. notation, lines of code,
words, etc) can make the work meaningful (p. 90)

C: Simple and good/human are associative ideas

This association once again relies on the agreed upon ideas that music can be meaningful. Cope argues that simple things can also be associated with the concepts of “good” and “human”. Cope’s inferences point to a different source of meaning where complexity isn’t a necessary component for emotional music. More so, the second inference supports the premise that composers can still invest emotional intent into the music by perceptually finding value in their work. In this case, the second inference goes further by suggesting that music notation and code can equally be valued, even though they are simple expressions of complex things.

**Association of human composition process and machine composition process**

P1: EMI is composing in the style of various composers

P2: Romantic qualities of music (soul, emotion, experience) can be experienced by the audience

P3: Music can contain meaning

I1: It’s difficult to recognize the different between human-created and machine-created music (Cope, 2001, p. 91)

I2: EMI uses processes that in some way mirror those used by human composers (p. 91)

C: Human composition and machine composition processes are associative ideas

Like the other associations, this argument once again relies on the general premise that music can be meaningful. The first premise also enhances the inferences since, if both agree that
EMI is composing at a level similar to humans, then the underlying process is similar enough to create a perceptual difficulty in telling between EMI’s work and human-created music. If the inferences are ultimately accepted, then one can commit to the idea that the underlying processes between humans and machines like EMI share distinct similarities.

**Association of the composition process as a mechanical process**

P1: EMI is composing in the style of various composers

P2: EMI’s compositional process is a mechanical process

I1: EMI uses processes that in some way mirror those used by human composers (Cope, 2001, p. 91)

C: Composition and mechanics are associative ideas

This argument relies on what Hofstadter and Cope agree about EMI. Specifically, the mechanical nature of EMI plays an important role in that, if the inference that EMI’s process is a mirror of the human composition process, then this mechanical nature must also be a quality of human composition.

**Separation of EMI/musical source and musical quality**

P1: The judging the quality of this work should be separate from the technological nature of EMI

I1: No inference is needed since this is an agreement

C: The judging the quality of this work should be separate from the technological nature
Once again, this point of agreement between Cope and Hofstadter requires no further argument.

**Separation of Soul/greatness/emotion and Music Itself**

P1: Romantic qualities of music (soul, emotion, experience) can be experienced by the audience

P2: Music can contain meaning

P3: Composers can consciously and subconsciously invest what they've heard and understand about music

I1: No work of art is intrinsically better than any other (Cope, 2001, p. 89)

I2: Listeners play a primary role in prescribing meaning/depth to a song/composer (p. 88)

C: Romantic qualities and complexity are separate ideas

This argument is similar to Cope’s earlier associative argument between simplicity and good/human qualities, but goes further to directly break the accepted association between romantic qualities of art and complexity. Once again, the premises allow for music to contain meaning. The inferences, however, remove the necessity for complexity by placing human perception as the source of meaning. In other words, regardless of how complex or simple a song actually is, the listener’s perception will ultimately determine the meaning and quality of the music.
Moving Forward

My analysis here reveals a deeper process of reasoning at work within Cope and Hofstadter's arguments. Walton's (1999) framework allows for a deeper understanding of the “chains of reasoning” for arguments of association/disassociation that Perelman's (1969) New Rhetoric doesn't address. For each general argument of association/disassociation, I highlight the starting points of agreement, the final conclusion, and the necessary inferences to bridge the two. The significance of this depth is established in three different ways.

First, greater understanding is achieved of Perelman's original framework by using this model of argumentation. In particular, I demonstrate the distinction between arguments that argue from reality, versus arguing to establish reality. The presence of premises determines whether an argument is taking from or arguing towards the agreed upon reality of the interlocutors. As well, I demonstrate how inferences within arguments of disassociation help to distinguish the two terms out of the unitary term, and can establish the value hierarchy through presumptive reasoning.

Second, the additional analysis of the types of dialogue allows arguments of association/disassociation to be used in non-persuasive contexts. I argue that the exchange between Cope and Hofstadter includes three shifting and coexisting types of dialogue: persuasion, information-seeking, and negotiation. The strength of commitment to the conclusion of each argument varies depending on the type of dialogue. For example, I am able to differentiate points where both Hofstadter and Cope are arguing with persuasive intent embodied in their arguments, and points where Hofstadter in particular is negotiating or information-seeking between different implications and concerns.
Finally, the model of chains of reasoning highlights a sense of movement within each argument. The process of reasoning itself is meant to move participants from an already accepted idea to a new conclusion. My analysis demonstrates that this is present in arguments of association/disassociation. From here, I expand on this idea of movement and conclude with a conceptual discussion on the interaction between New Rhetoric and New Dialectics in my analysis.
Chapter 5: Interaction Between Theories

In my final chapter, I conceptualize Cope and Hofstadter's dialogue in light of my analysis, and derive a modified model of argumentation influenced by the interaction between New Rhetoric and New Dialectics. I begin with discussing Cope and Hofstadter's commentary specifically, and then progress to the analytical frameworks I use in my overall analysis. Finally, I conclude with a synthesized model of argumentation, and a discussion of resulting limitations and implications of my thesis.

Cope & Hofstadter

In this section, I re-synthesize and discuss the dialogue between Cope and Hofstadter in light of my previous analysis. I demonstrate how these frameworks provide a “big picture” perspective of the process, and reflect on how the use of presumptive reasoning follows a course of resolving a particular tension present within the dialogue. I start with a discussion on the nature of presumptive reasoning within the dialogue, and then turn to how reasoning is used in response to the challenge EMI presents to the understanding of creativity. Overall, I argue that the two most important insights from this analysis are A. the movement of reasoning throughout the dialogue, and B. the role arguments of association/disassociation have in this movement.

Walton (1990) conceptualizes reasoning as a process of movement: typically moving from a starting point (premises) to an end point (conclusion) through inferences (warrants). Logic, inquiry, persuasion, and negotiation all become means of driving the process, while arguments become the tools for enacting these means. For Cope and Hofstadter's dialogue, Walton's conceptualization offers two insights I use in this section. First, the concept reveals that Cope and Hofstadter's dialogue is a process of movement. Both interlocutors begin with
particular assumptions and move to different conclusions through the discourse. Second, and perhaps more importantly, the concept reveals that this movement is often designed instead of naturally occurring in the structure of each argument.

One revelation that this conceptualization offers is the idea that the movement of reasoning is present in multiple levels of the discourse. As my dialectical analysis demonstrates, this movement occurs within each individual argument. The concept of all reasoning is meant to take participants from starting assumptions to the desired conclusion. The intentional nature of this movement can be seen with the selection of conclusions and inferences.

The movement of reasoning also occurs within each participant's individual commentary. For example, Hofstadter repeatedly moves between possible interpretations of creativity and stylistic imitation. At one end, he considers Greenberg's notion of "speaking like the composer" (2001, p. 53), and then moves to Rowell's idea of "learning a composer's grammar" (p. 57), all without directly committing to one particular perspective. The intent of movement is seen when Hofstadter associates Greenberg's idea of a genius with the inner qualities of style.

Perhaps the most unique insight is gained when the concept of movement is applied to the entire dialogue. Here, the metaphor of a story applies in two ways. First, the dialogue begins at the starting point of Hofstadter discussing EMI and progresses towards Cope's conclusion on perceptual creativity and genius. Second, the dialogue reflects the typical structure of problem, tension, and resolution often found in stories such as a typical hero's journey. This metaphor falls short in the sense that a "happy ending" isn't achieved in the dialogue, but Cope still offers a solution to Hofstadter's dilemma.

The story begins with the problem Hofstadter addresses at the start of his commentary.
The fact that Hofstadter experiences EMI's music as something more than a cheap imitation of classical music challenges Hofstadter's assumptions about AI and creativity (2001, p. 38).

Hofstadter is basically left with the issue of how a computer can write emotional music if the machine itself isn't complex enough to experience emotion to begin with. As a result, Hofstadter must use the movement of presumptive reasoning to consider the issue.

His process of reasoning leads him to revisit whether EMI's compositional process is a creative process or not. Part of this line of reasoning involves exploring how creativity and style may be conceptualized in a way that defines what may be called "creative" (Hofstadter, 2001, p. 42). Hofstadter's reasoning explores different notions of style and creativity, including Greenberg (p. 53) and Rowell's (p. 57) different conceptions of imitation, and finally concludes without a definitive solution or answer. Instead, Hofstadter's reasoning ends with the three possible implications that reduce the meaning of music and composers (p. 80). At this point, the movement of the reasoning carries over to Cope's commentary.

Cope offers a new line of reasoning that may address both Hofstadter's concerns and pursuit of conceptual resolution. Cope argues that the source of Hofstadter's frustration is the misidentification of the source of meaning within music (2001, p. 88). Instead of meaning and emotion being inherent within the music, Cope reasons that the source is perceptual (p. 88). People find meaning in music and their work based on how they see and hear art. The story thus concludes with this possible solution to Hofstadter's frustration. This line of reasoning offers a way for Hofstadter to find meaning in music created from a cold, emotionless machine.

The second important insight from my analysis is the role arguments of association/disassociation have within the reasoning process. The underlying framework of this
process is a web of associations that is altered in light of Hofstadter's problem. The previous associations that led Hofstadter to assume that meaningful music required meaningful experience are challenged from his experience with EMI's music. Previous associations are potentially broken, requiring the use of exploratory reasoning to "fix" his web of assumptions and understandings.

Arguments as products serve to facilitate the restructuring of this web. Each argument can create, deny, or undo associations that fundamentally alter the shared reality between the two participants. In this role, arguments both use and influence the overall progression of reasoning by either suggesting or "forcing" certain associations/disassociations in response to Hofstadter's problem. Both Cope and Hofstadter use argument as the primary means of facilitating the overall progression of reasoning with varying persuasive and exploratory purposes.

In the end, my analysis offers a "big picture" perspective on Cope and Hofstadter's dialogue that reveals more than two individuals arguing over creativity. This perspective offers a story of movement that beings with a potential challenge identified by Hofstadter, continues with a dialectical exploration of ideas and assumptions related to creativity, style, and imitation, and ends with a possible conceptualization that can accommodate the challenge. Further more, this perspective offers a look at the underlying mechanics of individual arguments and the overall process. In the following section, I conclude my discussion with a look at the individual contributions of each analytical framework, and the overall "analytical conversation" I argue has occurred.

Discussion: New Rhetoric & New Dialectics

I divide this final section up into two primary components. First, I review the individual
contributions each framework has provided to my analysis. Second, I discuss how both frameworks "interact" in an "analytical conversation".

**The analytical conversation.** Both frameworks interact in a way that I later argue develops a unique perspective on Cope and Hofstadter's commentary that would be impossible to achieve alone. I start with New Dialectic's contribution to the overall analytical process since the framework offered the most apparent contribution in response to New Rhetoric's persuasive limitation. I then end with a discussion of some surprising contributions from the New Rhetoric framework.

Within my analysis, the New Dialectics framework offers three important contributions. First, the framework sufficiently allows for multiple types of dialogic and participant goals through the use of presumptive reasoning. Thus, the limitation of New Rhetoric's assumption on persuasive intent is well accommodated. I find persuasion to be a part of Cope and Hofstadter's dialogue, in combination with information seeking and negotiation. New Dialectics reveals that the goals and intentions embodied within the discourse vary, shift, and coexist with each other throughout the dialogue.

Second, the framework provides further understanding to the concept of accepting or rejecting arguments. Since persuasion is only one component of the overall argumentation process, "gaining adherence" in terms of accepting arguments is also just one component of the process. Instead, New Dialectic's concept of commitment suggests that the entire process of reasoning facilitates the conditional acceptance of conclusions through sometimes persuasive, logical, and collaborative means. This contribution allows participants to conditionally accept conclusions, and allows the process to use various goals and intentions beyond pure persuasion.
Finally, the framework provides a unique perspective on the underlying mechanics of arguments of association/disassociation. By applying Walton's model of argument to Perelman's argumentative techniques, the result is an interpretation of how reasoning works within these techniques. My dialectical analysis of Cope and Hofstadter's general themes of association/disassociation demonstrates how each argument is a movement from starting points of agreement to conclusions of association/disassociation, facilitated by expressed or assumed inferences. Overall, this is a more nuanced view of Perelman's argumentative techniques that highlights the presence of presumptive reasoning at the argument-as-product level.

To summarize thus far, the New Dialectics framework interacts with various concepts introduced by the New Rhetoric framework in a way that either addresses particular limitations, or offers further insight into the mechanics of such concepts. New Rhetoric's interaction differs in the sense that it makes a conceptual contribution instead of addressing pre-existing concepts.

The New Rhetoric framework provides two interconnected contributions to my analysis. First, the framework offers a crucial understand to the primary type of argument present within Cope and Hofstadter's dialogue. The idea of arguments of association/disassociation provides a conception to practically understand and analyze the arguments Cope and Hofstadter make in the text. At the most basic level, this concept highlights the associations being created, denied, or disassociated within each argument.

Second, the framework offers an even greater contribution with Perelman's idea of reality. By introducing a reality that is "preferable" or "agreed upon" instead of absolute, the very concepts and perceptions at work within the discourse become "negotiable" to say the least. The
entire dialectical process becomes a manner of constructing and reconstructing the participant's agreed upon reality by altering the underlying web of associations.

**The conceptual argumentative process.** The analytical conversation between the two frameworks leads to a conceptual process of argumentation. The process of argument and reasoning I identify in Cope and Hofstadter's commentary can be abstracted to a general dialectical process of argumentation that is unique to both New Rhetoric and New Dialectics. In the end, I argue that the analytical conversation I describe in the previous section is necessary to solidify this particular process of argumentation.

The general form of this argumentative process is dialectical in nature, as informed by New Dialectics. Arguments with the process can serve a variety of goals depending on the type of dialogue(s) at play, but overall help to facilitate the movement of presumptive reasoning. The overall argumentative process is characterized by moving from the points of agreement discussed in New Rhetoric, to new conclusions of association or disassociation through the use of arguments. This process diverges from the New Rhetorical process in the sense that persuasive intent isn't assumed to be the primary goal of participants.

The underlying mechanics of this process rely on the combination of New Dialectic's presumptive reasoning, and New Rhetoric's concepts of associations and accepted reality. At the core, presumptive reasoning is at work facilitating participants' commitment to old and new ideas/values. More so, this process assumes certain constructionist-like assumptions of a shared agreement on the reality of the context. This agreement may contain objective or subjective truths, but more importantly it contains a web of associations that influences each participant's
understanding/experience of the reality.

Ultimately, this process is defined by the dialectical use of arguments to facilitate presumptive reasoning, in order to maintain or alter the web of associations that underlie the structure of the accepted reality. In the case of Cope and Hofstadter's dialogue, the process of reasoning is used to move from a disruption in the web that defines Hofstadter's original assumptions about creativity and AI. The dialectical process is enacted to assess these assumptions in light of EMI's work, and to reveal potential implications and solutions to the disruption of these assumptions.

Limitations & Implications

To conclude my thesis, I provide two limitations of this argumentative process model, and two implications that result from this conceptualization. The limitations help to define the scope and boundaries of this particular model. Along the same lines, the implications offer particular contributions to general argumentation studies.

One possible limitation of this model comes from the dialectical nature of the model. Since the model assumes a dialogical process where arguments are used for a variety of goals, traditional rhetorical contexts such as a speaker influencing an audience may be beyond the scope of this model. At the same time, the influence of Walton's types of dialogue can at least accommodate the presence of persuasive purpose. The primary limitation here may be the context of the argument itself. At this point, it is difficult to determine how large and complex dialogical conversations can conceptually be.

The second possible limitation is the complex, interpretative nature of the model. Since
the model adopts both New Rhetoric and New Dialectic's rejection of formal logic, the process of identifying arguments and the overall process of reasoning is an argumentative process itself. The analysis must support any interpretations/claims with reasoning and evidence. Therefore, if the overall academic goal is objective in nature, it may be difficult to accommodate this goal with the model.

Finally, I conclude with two implications for general argumentation studies. First, this model shares the implication of New Rhetoric on argumentation theory, namely the broadened influence of arguments as products. Both models conceptualize arguments as something more than simply chains of reasoning: arguments are capable of altering the very understanding or acceptance of reality. As a result, the argumentation process itself becomes a constitutive mechanism for the construction/reconstruction of understanding.

Second, this model highlights the evolution beyond the original distinctions between rhetoric and dialectics. Utilizing concepts from both argumentative traditions, this model suggests a value for bridging these distinctions when analyzing the use of arguments in everyday verbal and textual contexts. In the end, this continues the trend of continually revisiting our own assumptions and conceptions about the nature of rhetoric and dialectics.
References


Johnson, R. H. & Blair, J. A. (2002). Informal logic and the reconfiguration of logic. In D. M. Gabbay, R. H. Johnson, & J. Woods (Eds.), *Handbook of the logic of argument and inference: Turn towards the practical* (pp. 340-396). Amsterdam and New York:

Basingstoke, Hampshire: Palgrave Macmillan.


Cambridge, MA: MIT Press.


Walton, D. & Godden, D. M. (2007). Informal logic and the dialectical approach to argument. In H. V. Hansen & R. C. Pinto (Eds.), *Reason reclaimed* (pp. 3-17). Newport News, VA:
Vale Press.


