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Stopping at Stoppard: Decompositional Linguistic Models and Deconstructionism in Stoppard's The Real Inspector Hound and Arcadia

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Decompositional Linguistic Models and Deconstructionism in Stoppard's *The Real Inspector
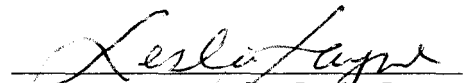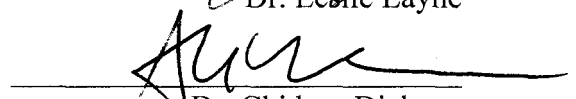Hound* and *Arcadia*

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This thesis will develop connections between the decomposition of binaries in the cognitive linguistic model of prototype theory and the deconstructionism of binaries in the literary critical theory of deconstructionism, focusing on Tom Stoppard's *The Real Inspector Hound* to show the operation of the theory in literature and using on Stoppard's *Arcadia* as an example of an application of prototype theory as a critical lens. Prototype theory is a linguistically and psychologically-based theory of categorization which rejects the definition of categorization found in classical theory. Deconstructionism is a reaction to and a partial rejection of structuralism, and teaches that language deconstructs itself through the breakdown of binaries and through a focus on the assumptions made within a text. Both these theories break down the binary conceptualizations in language set up by former theories, while avoiding anti-order by a continued use of binaries in different ways or by a re-ordering into new binaries or into multiplicities.

Stoppard, who is often defined as a poststructuralist writer, has often been viewed through the lens of deconstructionism critical theory.[1] However, his texts have not before been viewed through the lens of the similar transdisciplinary theory of prototypical categorizations. This thesis will use *The Real Inspector Hound* as an example of binary breakdown through the text's overt discussion of binaries, and *Arcadia* as an example of prototype theory textual

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[1] See Antor, Heinz. "The Arts, the Sciences, and the Making of Meaning: Tom Stoppard's Arcadia as a Post-Structuralist Play." Anglia - Zeitschrift für englische Philologie 116.3 (2009): 326-354. Print., Hooti, Noorbakhsh, and Samaneh Shooshtarian. "A Postmodernist Reading of Tom Stoppard's Arcadia." Studies in Literature and Language.7 (2010): 13. Web., Jernigan, Daniel K. "A British Stage of the Postmodern: Theatre as Cultural Capital in Tom Stoppard and Caryl Churchill." Ph.D. Purdue University, 2001. United States—Indiana: Web., Jernigan, Daniel. "Tom Stoppard and 'Postmodern Science': Normalizing Radical Epistemologies in Hapgood and Arcadia." Comparative Drama 37 (2003): 3-35. Web., Lau, King. "Postmodern Performance in Tom Stoppard's Travesties and Arcadia." University of Hong Kong (Pokfulam Road, Hong Kong), 2003; OCLC. Web., and Martyniuk, Irene. "'This is Not Science. This is Story-Telling': The Place of the Individual and the Community in A. S. Byatt's Possession and Tom Stoppard's Arcadia." CLIO (2004): 265. Web.

analysis through a discussion of the prototypicality of the different kinds of love portrayed in this text.

The Robin and the Penguin: The History of Prototype Theory

The classical theory of categorization and the semantic understanding of concepts remained in place for hundreds of years.[2] Aristotle in ancient Greece posited a binary understanding of concepts based on necessary and sufficient conditions. This meant that "an entity represents a category member by virtue of fulfilling a set of necessary and sufficient conditions...called 'necessary and sufficient' because they are individually necessary but only collectively sufficient to define a category."[3] Within classical theory, entities are considered to be a part of a category if they meet these conditions and to be outside of a category if they do not. A more recent version of these necessary and sufficient conditions is Katz and Fodor's analysis of bachelor in 1963[4], in which members of the category 'bachelor' are entities that meet the conditions of being human, male, and unmarried.[5] However, identifying "a precise set of conditions that are necessary and sufficient to define a category" proves exceedingly difficult in practice. Classical categorization theory also ignores prototypicality effects present in human categorization like degrees of membership—meaning that classical theory does not recognize any member of a category as a better example of that category than any other member. Categories are conceptualized as binary; an entity is either a member of a category, or it is not.

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[2] This classical theory is based on Western classical logic. Eastern forms of logic are in some ways more tolerant of contradictions and are more likely to readily break the Law of Non-contradiction set up in Western logical rules. This means that Eastern logic is less likely to have binaries present.

[3] Evans, Vyvyan, and Melanie Green, "Chapter 8: Categorization and Idealised Cognitive Models," *Cognitive Linguistics: An Introduction,* Edinburgh: Edinburgh University Press, 2006, LC2, the library catalog. Web. 8 Sept. 2014, p. 251.

[4] Katz, Jerrold J. and Jerry A Fodor. 1963, "The Structure of a Semantic Theory," *Language,* 39, 170-210.

[5] Geeraerts, Dirk. *Cognitive Linguistics: Basic Readings,* EBSCO: Mouton de Gruyter, 2006, Web. 8 Sept, 2014, p. 142.

The development of an alternative cognitive model of categorization, which would correct the weaknesses and inconsistencies found in the classical theory, was finally begun by Wittgenstein, postulated clearly by Rosch, and expanded and further explained by a wide range of scholars but most primarily by Lakoff and Jackendoff. Today, prototype theory is a wide-ranging series of interconnected propositions that all center around a complete cognitive model which argues that the reality of the way that information and concepts are categorized is not held up by the classical theory.

With his game theory in a passage in his *Philosophical Investigations*, the philosopher Wittgenstein in the 1950s first began the discussion of the issues found in classical categorization theory that would eventually lead to the development of prototype theory. In this passage he attempts to define the term 'game' using necessary and sufficient conditions, but finds instead that the many examples of games are connected by an intertwining series of qualities at the structural level, and that one game might not have anything in common with another.[6] For example, many games involve other people, but games like handball and solitaire do not. There is a whole subcategory of games that require active movement, and yet many games can be played sitting down around a deck of cards. In short, there is not set of necessary and sufficient conditions, which would be required for a classical categorizational understanding, that can be used to describe the category of games. At this point Wittgenstein develops and argues for a concept he calls "family resemblances" as the underlying structure of the category 'game' and, by extension, other categories that do not fit into the classical model.[7] Wittgenstein urges his readers to

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[6] Taylor, John R, *Linguistic Categorization,*2nd Ed. Oxford: Oxford University Press, 1995, Print, p. 38
[7] Taylor 39

> *look* and *see* whether there is anything common to all...And the result of this examination is: we see a complicated network of similarities overlapping and criss-crossing: sometimes overall similarities, sometimes similarities of detail. I can think of no better expression to characterize these similarities than 'family resemblances'; for the various resemblances between members of a family: build, features, colour of eyes, gait, temperament, etc. etc. overlap and criss-cross in the same way.[8]

Wittgenstein recognized the shortcomings inherent in a binary system of categorization where an object either is or is not part of a category, and sought to remedy it with a new definition of structure, family resemblances, which would later become the foundational explanation of structure in prototype theory, as argued by Rosch and Mervis.

Austin, in part responding to Wittgenstein, and also reacting against the issues posed in classical theory, extended these ideas to the study of words themselves, and this approach functioned as a precursor to the contemporary understanding of polysemy as prototypical.[9] Polysemy deals with the multiple meanings used for many words; for example, the word *see* is used in many different ways: "Can I see that?" "Oh, I see" "I can't see over your head." For the these three examples, 'see' would mean something similar to holding or touching, understanding, and visually perceiving, respectively. However, if 'see' was defined, most English speakers would respond with the third meaning, the visual perception of colors and light. This is because the third definition is the prototypical definition of 'see,' and the first two definitions are more atypical.[10] Polysemy is a difficult concept to contend with, because often the various definitions for words are related, and one must decide exactly what measure of differentiation in usage and meaning calls for a separate lexical entity of the word. Prototype theory provides a model that

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[8] Arrington, Robert L. and Hans-Johann Glock, *Wittgenstein's Philosophical Investigations* [Electronic Resource]: Text and Context, London: Routledge, 1991, 1991. Web.

[9] Lakoff, George, *Women, Fire, and Dangerous Things: What Categories Reveal about the Mind,* Chicago: University of Chicago Press, c1987, 1987, Print, p. 18

[10] The relationships between these definitions are also influenced by metaphors, most notably the metaphor of light as knowledge, which pairs seeing with understanding, but an explanation of these is not necessary for the discussion here. These metaphors are discussed in length in Lakoff's *Metaphors We Live By*

more easily and accurately describes difference in word meanings, since it is able to show the connections between the meanings as well as the prototypicality effects in word meaning usage.[11]

In 1965, this line of thought started by Wittgenstein was aided by Lotfi Zadeh's technical development of a theory of fuzzy sets as an addition to standard set theory.[12] This new development of fuzzy sets is another instance of a reaction against a more classical and binary theory. In classical set theory, every object is placed either inside or outside of a category, similar to Aristotle's classical concept of categorization with conditions.[13] The development of fuzzy set theory was a new way to conceive of fuzzy boundaries and is similar to degrees of memberships, which is a foundational part of prototype theory. Fuzzy set theory is based on the intersection, the union, and the complement of two categories,[14] and recognizes degrees of membership.[15] Later on, in 1978, Kay and McDaniel published a paper in which they argued that basic color terms and the relations between them are best described in terms as a fuzzy set, instead of in more classical or Katzian terms of analysis. Kay and McDaniel discuss the neurophysiological basis of color perception,[16] and then plot the four basic hues in terms of fuzzy set theory, assigning different hues each a number between zero and complete unity with the basic hues that they have defined, according to Zadeh's fuzzy set theory.[17] The basic color terms,

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[11] Further examples of polysemy using prototype theory can be found in Jackendoff's (2002) analysis of 'climb' and 'in,' in his *Foundations of Language: Brain Meaning, Grammar, and Evolution*, or in the analysis of 'over' in Lakoff (1987) *Women, Fire, and Dangerous Things*.

[12] Lakoff 22

[13] Lakoff 22

[14] Lakoff 22

[15] Kay, Paul & McDaniel, Chad K., "The Linguistic Significance of the Meanings of Basic Colors Terms," Language 54.3 (1978): 610-646, Print, p. 621.

[16] There are in reality considered to be only four basic color hues, although there are six basic color terms, because black and white are not considered hues. Kay and McDaniel dealt only with the four major hues in their analysis.

[17] This work in fuzzy set theory and its application to color terms is important and relevant because Kay and McDaniel's analysis established color terms as resulting from our cognitive perception of the world. This proved that language is non-autonomous and therefore provided evidence for prototype theory as a general cognitive

since they can be defined as a fuzzy set, also function as a perfect example of a category that

displays prototypicality effects, meaning that some reds, for example, are commonly seen as

better examples of the category red than others, as evidenced in Kay and McDaniel's argument

for fuzzy set theory as a descriptor. Fire engine red, one feels, is a more basic and better red than

maroon.

With these developments as a background, Eleanor Rosch formed the idea of prototype

theory in a series of papers in the 1970s. Rosch and Mervis conducted six studies that aimed to

develop support for the argument that family resemblances are the structure that defines

prototypical members and less prototypical members in categorization.[18] These experiments,

taken together, show that the more attributes that a member has in common with the other

members in that category, the more prototypical that member is, and conversely, the fewer

attributes a member has, the less prototypical a member of that category is. Findings like Rosch

and Mervis's experiments provide proof that this is how humans conceptualize categories in the

world. This family resemblance can be used as a structural basis for prototype theory, explaining

why some members are considered prototypical and others are not.[19] Simply put, Rosch's

prototype theory argues that a robin, because it has more qualities in common with other birds, is

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process. The non-autonomous nature of language means that language does not exist alone: it is irreversibly connected to and intertwined with other cognitive thought processes. In short, color terms are an example of language based in other physical processes, which means that language does not function autonomously.

[18] The first and third studies had subjects list attributes for members in categories that had previously been rated for degrees of membership in that category. Experiments two and four had subjects list superordinates of these members and attributes of contrasting superordinate categories. In experiments five and six, artificial categories (arbitrary strings of letters) were used to show that family resemblances positively affected ease of learning and positive reaction times for subjects.

[19] Rosch, Eleanor, and Carolyn B Mervis, "Family Resemblances: Studies in the Internal Structure of Categories," *Cognitive Psychology* 7(1975): 573-605. Print, p. 599.

a better or more prototypical member of the category bird than a penguin, which shares fewer

qualities with other category members.[20]

Rosch is considered the founder of prototype theory and made explicit many of its most

important foundations: namely, the existence of degrees of membership and family resemblances

as the creators of the structure of a category defined by prototype theory. However, the theory

has many far-reaching and interdisciplinary applications, since it can be thought of as a general

cognitive process of categorization, instead of a strictly linguistic theory. Both George Lakoff

and Ray Jackendoff have expanded upon prototype theory by introducing further semantic

structures and applications. Lakoff discussed the idea of his Idealized Cognitive Models (ICMs),

and Jackendoff developed an elaborate theory of semantic components which functions similarly

to syntax structure like X-bar or Government and Binding theory.

Lakoff contends in his book *Woman, Fire, and Dangerous Things* that "we organize our

knowledge by means of structures called idealized cognitive models, and that category structures

and prototype effects are by-products of that organization."[21] Essentially, Lakoff provides ICMs

as the source that gives rise to prototypicality effects in categorization. These ICMs are

"relatively stable mental representations that represent theories about the world."[22] ICMs are

built on background knowledge about the world[23] and they are idealized because they represent a

range of experiences rather than specific ones. Lakoff argues that both his ICMs and the

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[20] Degrees of membership reflects Rosch's belief that "division of the world into categories is not arbitrary" but is a result of human cognitive processes, and confirms Wittgenstein's argument that formal criteria—necessary and sufficient conditions—are not necessary, since categorical relationship can be defined in terms of family resemblances. The Whorf-Sapir hypothesis states that thought is formed and shaped by language, and that the language one speaks is therefore integral in the creation of one's thought process. Rosch also reiterates this argument against language as autonomous or as being controlled by thought in the Whorfian sense in her review of linguistic relativity, in which she uses color terms and the structures in language to support the idea that language is formed from reality.

[21] Lakoff 68

[22] Evans and Green 270

[23] This is similar to Fillmore's theory of frames in semantics.

clustering of these ICMs function as the source and the underlying structure that gives way to prototypicality effects. For example, our prototypical version of 'bachelor'—an unmarried man of a certain age who lives alone, is not involved with anyone, and does not belong in the clergy—is based on a society which has expectations about marriage and the marriageable age.[24] The more prototypical a bachelor appears, the closer the ICM fits our knowledge about the world. For his argument for cluster models showing typicality effects, Lakoff uses the many different conceptions of a mother (birth mother, genetic mother, nurturing mother, etc.) to show that the ideal and prototypical mother would be considered the one that fits into all of these categories. Therefore, the prototypical mother exists at the convergence or the clustering of all of the various models. Each mother is considered a mother by its relation to this ideal or prototypical model.[25]

Jackendoff also focuses on what he calls encyclopedic knowledge and its interdependence with linguistic meaning.[26] He uses a simple example to support this idea: what we would term a "small elephant" is in reality bigger than what we would call a "big mouse," which means that the categories of big and small are in part determined by our knowledge of the standard sizes of these animals, our encyclopedic knowledge. This interdependence means that "necessary and sufficient conditions cannot be stated because of a blurred and/or context-dependent boundary."[27] Jackendoff also discusses and breaks down the individual words 'climb' and 'in' in a way similar to Lakoff's breakdown of the word 'mother.' He concludes that these words are built out of what he calls cluster concepts: "thus we see again the characteristic non-

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[24] Lakoff 70
[25] Lakoff 76
[26] Jackendoff, Ray, *Foundations of Language: Brain Meaning, Grammar, and Evolution,* Oxford: Oxford University Press, 2002, Print, p. 352.
[27] Jackendoff 352

Boolean interaction of conditions to form a cluster concept...Concepts organized this way...are combinations of conditions."[28] Jackendoff and Lakoff both contend that our conception and categorization of words is built up from an interdependent interconnected web of meanings, drawing from both encyclopedic or background knowledge and from linguistic meaning.

The Contemporary Web

This history and development of prototype theory leads to a contemporary model with many components and a web of sub-theories and expansions. The most important and relevant parts of prototype theory to the discussion are degrees of membership, and the underlying web of constructions that create word meaning, defined in part by Wittgenstein's family resemblances, Lakoff's ICMs, and Jackendoff's cluster concepts. These tenets are primary components of prototype theory, and they are similar to deconstructionism's theory of word meaning.

When simplified, family resemblances, Lakoff's ICMs, and Jackendoff's cluster concepts play similar roles in prototype theory. All three act as sources or underlying structures with prototypicality as the identifiable result. While Lakoff's ICMs and Jackendoff's cluster concepts are more defined by and connected to background or encyclopedic information and semantic frames, all three theories use cluster models as the source of prototypicality. Essentially, they all describe the idea that the more characteristics an object or concept has in common with the rest of the members in that category, the better an example, or the more prototypical an example, that object or concept is for that category. Conversely, the less an object has in common with a category, the less prototypical that object becomes. Most importantly, this base for prototypicality effects means that there is no fixed foundation on which categories are based. Every object in a category is judged on its relation to the other objects in that category, instead of

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[28] Jackendoff 353

on fixed or predetermined conditions. Fundamentally, objects are defined only by their relations instead of against an outside standard of conditions. The source of prototypicality effects as a cluster model is one connection that prototype theory makes with deconstructionism.

Lakoff's and Jackendoff's models for sources of prototypicality effects also take into account the background or encyclopedic knowledge and its interplay and interdependence with linguistic meaning. Both ICMs and cluster concepts posit that one's conception and categorization of a word or of a category member is in part dependent on the knowledge that one has about the world. As Lakoff states, the prototypicality effects present in members of the category of bachelor, which was formerly thought a good example of Katzian categorization, are due to social or background knowledge like the average marrying age and even the concept of marriage. This acknowledgement of linguistic meaning as dependent on social constructs is a primary point in deconstructionism.

The single most important and defining notion in prototype theory is the notion of degrees of membership. Prototype theory most essentially argues that the boundaries between categories are fuzzy, and that it is possible for one object to be a better member of a category than another. This is radically opposed to the binary categorization of Aristotelian and Katzian categorizational theory. It breaks down that binary understanding of human cognitive categorization by introducing the idea of gray areas in categories. Instead of binary categories, degrees of membership describes overlapping categories defined not by lines but by a fading out as members become less prototypical. This portion of prototype theory is the most overt example of partial binary breakdown and can be seen in the practice of deconstruction as well as the discussion of binaries within *The Real Inspector Hound.*

Chains of Signifieds

Deconstructionism is first a reaction against the literary criticism theory of structuralism, which seeks to develop and reveal "underlying structure and the principles that govern their composition."[29] This theory recognizes as its founder Ferdinand de Saussure, who taught that language is arbitrary in the sounds it uses to represent ideas. An English speaker, for example, may contend that there is something inherently victorious, triumphant, or divine in the phonology of the word 'glory,' but a speaker of the German language finds no such connection. Even onomatopoeias, Saussure says, are different across languages and not realistically representative of natural sounds. A dog's bark, for example, might be 'woof' or 'ruff' in English, while it is 'waouh' in French and 'ham' in Romanian. Saussure also first created the concept of the *langue* and the *parole*, which function as the deeper meaning and the surface phenomena of a word, respectively. Another way of writing this formula is the sign is the sum of the signifier and the signified.

Deconstructionism takes structuralism's attempts at finding underlying meanings or structures and proclaims that these meanings are naturally or "always already" broken down due to the relative web of interconnected meanings, including those of social constructs, that words are built upon. Deconstructionist or postmodern (the terms will here be used interchangeably) literature deals existentially with the lack of meaning in life and in language. Deconstructionism postulates that language is slippery and changeable. For example, in English many words can be used interchangeably as verbs or nouns; English lends itself to this pattern of linguistic conversion. This means that, since a word can either be a verb or a noun, it can be read syntactically differently and is therefore ambiguous, which supports deconstructionism's view of a changing and slippery language. Syntactic and semantic ambiguity from linguistic theories can

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[29] Tyson, Lois, "Deconstructive Criticism." *Critical Theory Today: A User-Friendly Guide*, 2nd Ed. New York: Routledge, 2006, Print, p. 209.

describe the ambiguity that deconstructionism recognizes, discusses, and uses to develop its theory and criticism.

Deconstructionism also rewrites the structuralist formula, meaning that a word is really an accumulation of all of our associations with that word—a chain of signifieds. The accumulation of these identifiers and connections that we make creates the idealized concept in our minds of the object. According to deconstructionism, these idealized versions of concepts that are built up by interconnections of meaning, both linguistic and social, indicates that any word meaning is the sum of all of the uses of that world, and that any combination of words is not just the sum of those word meanings but necessarily involves the interactions of those meanings to give the sum of how those words function together. The deconstructionist conceptualization of words and word combinations as dependent on a web of interconnected linguistic and social meaning and information is similar to the cluster models that Lakoff and Jackendoff posit as a source for prototypicality effects in categorization of words. Both argue for idealized or representative versions of concepts as a way of perception, and for meaning as built on interactions between multiple conceptions and the interdependence of linguistic meaning and social or background knowledge. In order to show this structure present, deconstructionist criticism looks at the binary oppositions present in the text and the structure of privilege given to one side of the binary, and aims to shows how the language naturally deconstructs itself as the superficially binary oppositions break down and the privilege becomes subverted.

Derrida, who can be called the founder of deconstructionist theory, argued that language can be defined by two concepts: the signifieds postpone meaning and, more importantly, this meaning comes from the difference we find between words and word meanings. For Derrida, this difference in meaning is the only meaning that language can have, and he coins his difference

"différance," using a play on the French words for differing and deferring. Derrida and deconstructionism admit our dependence on language, but use this analysis of its faults to determine that we can use language in new ways in order to easily develop new meanings.

Robins are Birdy Birds

Prototype theory and deconstructionism function and argue so similarly that they can almost be viewed as the same theory taking on different forms across disciplines. Similarly, prototype theory can be likened to paraconsistent[30] logic forms in philosophy and can be shown to have much in common with the contemporary understanding of quantum physics. There is a general tendency across the board towards an attempt at new models that allow for the messiness of reality and away from old models defined by classical logic. These new models strive to allow for the breakdown of binaries without a total breakdown into meaninglessness. Prototype theory and deconstruction both do this by breaking down binaries in order to set up multiplicities, or sometimes in the case of deconstructionism, to set up new binaries. These two theories relate most importantly in their reactions, the new structures they set in place, their breakdown of binaries, and their application to polysemy.

Both prototype theory and deconstructionism were begun as reactions: prototype theory as a reaction against classical theory and deconstructionism as a reaction against structuralism. This is important for the theories themselves and for the connection between them, because it means that the background of both theories was a structure set in place that did not accurately reflect reality. For prototype theory, the Aristotelian method of categorization posed many problems: it did not account for exemplars or for degrees of membership, both of which exist in real cognitive processes, it had no way to deal with "damaged" objects like a three-legged dog,

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[30] A form of logic where something can be both true and untrue at the same time, or one that breaks the rule in classical logic of non-contradiction. This logic can be used to deal with paradoxes.

and the strict binary categories were unable to describe many categories like Wittgenstein's games. The classical categorization theory, which was presumed to be true based on assumptions about categories, did not accurately describe the reality of human cognitive categorization. Prototype theory reacted against this basis in order to develop a new structural theory with rules that more accurately reflected how humans categorize objects, words, and concepts. In the same way, deconstructionism's precursor, structuralism, seeks the underlying structures of words in terms of *langue* and *parole*, while deconstructionism aims to replace these structures with the messier but more accurate descriptor of a series of interrelated signifieds that cluster together to form concepts. Both theory's source and purpose is replacing old structures with more chaotic yet accurate theories.

Reflections and similarities can be drawn between the new structures that each set in place as the source for cognitive categorization. The proposed structures that function as the source for prototypicality effects in categories are family resemblances and Lakoff's ICMs, or Jackendoff's similar cluster concepts. These structures operate on a clustering of different qualities. This understanding of categorization relies on the clustering of qualities both linguistic and social to create the fully sum of the meaning of a word. Deconstructionism's replacement model for understanding word relations is analogous to these cluster models. Deconstructionism's theory of chains of signifieds can be seen as another version of the cluster models proposed by prototype theory. In the same way that qualities cluster together to describe the prototypicality of an object or concept, deconstructionism teaches that associations made from social context connect, intertwine, and cluster together to form the full and idealized conception of a word. Both theories replace models described by binary relations with models that deal with the clustering and intertwining of a bevy of different but associated ideas.

Prototype theory, in its idea of degrees of membership, takes the binary distinctions between categories and introduces the idea of fuzzy boundaries as a descriptor of human conception. It takes apart the barrier between "A" and "not A" through its insistence that some objects may be "sort of A," "very A," or "very not A." Essentially, the former binary conception of categories is destroyed to make way for a conception that is based instead on multiplicities. The evidence for prototypicality means that we define things not only by their opposite but by comparison with a series of alike and unalike objects. Prototype theory replaces binary opposites with multiplicities.

Deconstructionism relates to this tenet of prototype theory in two separate ways: its own overt breakdown of binaries and Derrida's *différence*. The process of a basic deconstructionist application to a literary text includes seeking a binary opposition that exists in the text, determining the side of the binary that holds the power (the privileged), and then subverting that privilege in order to show that the binary does not truly exist in the text because of the natural tendency of language towards deconstructionism due to its slippery and ambiguous nature. Deconsructionism, therefore, operates against the binaries present to break them down, replacing *the former meaning binary with multiplicities or with another binary.*

Prototype theory and deconstructionism reflect each other in the breaking down of binaries, but also in the reordering of concepts. The binaries do not break down into chaos, but into multiplicities with traceable relations. And in different ways, prototype theory and deconstructionism both require binaries. Deconstructionism operates against a background of assumed binaries in the text; the searching and finding of binaries is a necessary step in the application of deconstructionism to a text. Deconstruction, therefore, requires binaries in order to deconstruct. In the same way, prototype uses binaries in its application, since the degree of

membership, or the amount of prototypicality, of a member is determined by creating what is a essentially a checklist of traits that appear to be common across the category. This sort of checklist is similar to a list of necessary and sufficient conditions, but the difference between the two systems is that the items in the checklist for prototype theory determine degrees of membership instead of functioning as requirements for that category.

An example of this sort of prototype theory application would be determining the prototypicality of birds. Traits common in birds would include a small size, feathers, three-toed feet, a chirping sound, wings, and an s-shape. A checklist of these categories would be designed in order to show how many of these traits would apply to various kinds of birds. A robin, for example, which is considered to be an exemplar, or a very prototypical example, of the bird category, would have all of these featured checked off. A penguin, by contrast, which is considered to be a worse or less prototypical example of a bird, would have only wings marked off. In this way, prototypicality is shown through a system of binaries. Below is an example of such a binary breakdown.

Member	Small Size	Feathers	Three-toed feet	Chirping sound	Wings	S-shape
Robin	Y	Y	Y	Y	Y	Y
Penguin		Y			Y	

Lastly, prototype theory and deconstructionism deal similarly with the conception of individual words. Prototype theory, as previously mentioned, allow for a new understanding and provides a better model for the occurrence of polysemy (multiple conceptual entities associated with a single word) by allowing for prototypicality effects at the level of individual words. When a single word can be used in multiple different ways, with multiple conceptual meanings, prototype theory provides a model for the relations between these meanings, instead of defining

the separation of one meaning from another, and is able to show which word meaning and uses are more prototypical. Much of polysemy is based on metaphoric language, as in the case of the aforementioned 'see,' which has some of its meanings based on the metaphor of seeing as understanding, paralleled by words like 'illuminate' and 'enlighten.' This metaphoric nature present in words is necessary for an understanding of the ambiguities present in literature. Additionally, this multiplicity of meanings present in one word is similar to the chain of signifieds that is present behind the conceptualization of every word according to deconstructionism: every word contains a build-up of multiple meaning, understandings, and associations, many of which are metaphoric.

While the similarities present in these two approaches are substantial, binary oppositions as conceived of in deconstructionist theory are slightly different from binary categorization in prototype theory. While prototype theory's binaries can be defined by the "A/not A" distinction, deconstructionism's binary oppositions are more properly defined as opposites. In other words, prototype theory's binaries would be described as "white/not white" whereas deconstructionism's would be described "white/black." The distinction is a minor one, but it is important to note that the prototype theory definition of binaries is more technically clear and closer to binaries defined by logic, though they are also narrower.

Keeping the Space Warm in *The Real Inspector Hound*

Tom Stoppard's plays have often been paired with deconstructionism as a literary theory, and Stoppard himself has been called a postmodernist. Although his plays have not been looked at from the standpoint of prototype theory, they have lent themselves to transdisciplinary theories in the past, especially theoretical particle physics and philosophy.[31] Stoppard tends to employ

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[31] For examples see note 39.

real concepts found in physics or other sciences in the characters and the interactions in his plays, which means that Stoppard's plays use concepts in the worlds of science and philosophy and bring them into the human world.

In Stoppard's *The Real Inspector Hound*, he deals with pairing and the definition of binaries overtly while at the same time breaking the binary between the real and unreal, the audience and the play world. This sort of metatheatre makes *The Real Inspector Hound* an ideal candidate for analysis by both deconstructionism and prototype theory, as the play has a dual dealing with binaries. *The Real Inspector Hound* shows the similarities between these two theories, particularly the most primary similarity of challenging binary understandings.

Though prototype theory and deconstructionism in many ways function as different versions of the same questions and conclusions, different replacement models for word meaning, they do have one major difference: prototype theory, because of its mathematical basis, more clearly provides a conceptual model replacement, whereas deconstructionism and particularly literature that is described as deconstructionist can sometimes tend to wax towards existentialism and the claim that there is no meaning. Beckett's famous *Waiting for Godot* is a prime example of this questioning and eventual conclusion of no meaning. Derrida did provide a new partial model with his *différence*, where language meaning is dependent only on the differences between words, but overall the focus of deconstructionism is on bringing down the structures of structuralism in order to show that there is no structure. As Demastes claims in his essay about Stoppard as a proto-Chaotician, there is a split between the old order that depends on logic based still in Aristotelian thinking and the new anti-order of deconstructionist and postmodern works.[32] However, a new kind of order, one that describes the world in a contemporary viewpoint, with

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[32] Demastes, William W, "Portrait of an Artist as Proto-Chaotician: Tom Stoppard Working His Way to Arcadia." *Narrative*, 2(2011): 229. Web. p. 230.

allowances for our admittance of subjectivity and the fuzzy areas, has not risen up to replace the old order. The quantum physics and paraconsistent logic of literary theory is missing. Prototype theory, because of its combination of a focus on language and a mathematical background, could provide this type of breakdown into a more chaotic structure within literary criticism.

In his essay, Demastes describes Tom Stoppard as trying to create something in between the more realistic and classically logical works and the anti-order postmodern works. He turns away from the old models while keeping "an insistence that an implicit structure exists which prevents total disorder and forever increasing entropy," a major theme in Stoppard's more famously known play *Arcadia*.[33] Stoppard searches for a model that allows for chaos, and his later interests in chaos theory and quantum physics bring him closer to this new definition of order. Prototype theory is one such example of the redefined order which reinstates structures within a contemporary view without wholly abandoning or rejecting structure.

Stoppard's plays have a habit of working as "thought experiments." Both Demastes and Clive discuss them as "plays that function like thought experiments and that question and challenge the presumptions we have allowed to underlie our habituated ways of looking at the world."[34] Arcadia, for example, deals with and questions entropy, the descent into chaos, and thermodynamics. *The Real Inspector Hound* has a more linear plot structure in terms of chronology, but it too deals with upending preconceived notions. Most obviously, *The Real Inspector Hound* seeks to break down notions of the typical clichéd version of the mystery play. It focuses on the plot, and on surprising the audience in the typical way: with who did the mystery. Of course, Stoppard's play breaks down barriers with this plot structure, creating a duplicity of audience and a framed story by placing two of his characters in the audience within

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[33] Demastes 231
[34] Demastes 231

the play, as critics of the murder mystery that occurs as a play within a play. By doing this, Stoppard is able to break the barrier between reality and stage while still remaining contained on the stage. And it is this breakdown between the critics and their play that enables Stoppard to create a new twist in a plot structure that is defined by surprise and clichéd twists. This overt breakdown of binaries in the text mirrors prototype theory; prototype theory breaks down binaries into multiplicities, and *The Real Inspector Hound* provides a sort of model or example for this breakdown and reordering.

On a larger level, Stoppard's play deals with the breakdown of the binary of the real and the unreal, which is a common theme found in postmodern literature and especially theater, where it is easier to break the boundary between the play and the audience. Stoppard, of course, does this in new ways. His play begins when "the audience appears to be confronted by their own reflection in a huge mirror. Impossible."[35] *The Real Inspector Hound* captures a play within a play structure, following the audience of a murder mystery play as they critique it. Throughout *The Real Inspector Hound*, however, the two critics become involved in the plot of the play. First Birdboot and then Moon are drawn in, answering the phone ringing on stage, and then playing out the same scenes they have just seen, with similar dialogue and actions. It is when the dead figure that has been lying on the stage throughout both plays is revealed that it becomes apparent how intertwined the play within the play and the real life within the play are.

Stoppard succeeds in uprooting preconceived notions in terms of plot structure. But of greater importance is the subtler dealing with binaries that run through the character relations and through the structure of reality and stage. *The Real Inspector Hound* converses with binaries in these two different ways. The character description comes in some of the first lines in the play,

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[35] Stoppard, Tom, *The Real Inspector Hound*, New York: Grove Press, 1968, Print, p. 5.

when Moon, one of the critics, laments his secondary nature as a critic—essentially, his place as

the unprivileged side of the binary. Characteristic of Stoppard, Moon's description of his place in

the binary makes its way into more technical description and ponderings. The other critic,

Birdboot, wrapped up in his own thoughts, repeatedly and comically asks Moon where Higgs,

the "first string" critic, is, which Moon answers with a series complaints over his condition.

> MOON: It is as if we only existed one at a time, combining to achieve continuity.
> I keep space warm for Higgs. My presence defines his absence, his absence
> confirms my presence, his presence precludes mine…When Higgs and I walk
> down this aisle together to claim our common seat, the oceans will fall into the
> sky and the trees will hang with fishes.
> BIRDBOOT: (*he has not been paying attention, looking around vaguely, now*
> *catches up*) Where's Higgs?
> MOON: The very sight of me with a complimentary ticket is enough…It will
> follow me to my grave and become my epitaph—Here lies Moon the second
> string: where's Higgs?...sometimes I dream of revolution, a bloody *coup d'etat* by
> the second rank...Sometimes I dream of Higgs.[36]

This is an early establishment of a clearly defined binary, in the terms of prototype theory,

defined not simply as opposites but in the form "A/not A." Moon's speech reveals that if the

boundaries of this binary were ever to be questioned or broken down, the world would descend

into saturnalia of the Shakespearian sense, since nature would be turned on its head. The binary

then, at least for Moon, upholds the structure of the world. The other point here, more closely

related to deconstructionism's approach, is the emphasis on the unprivileged side of the binary,

and the dream of what is basically a deconstructionist literary critique: the revolution of the

unprivileged in the binary and a reversing and overthrowing of the structure, which also leads to

chaos.

However, the perceived structure of the binary begins to breakdown within the play, done

first through Moon himself, when he begins to discuss the third element of the supposed binary:

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[36] Stoppard 6

MOON (*ruminating quietly*): I think I must be waiting for Higgs to die.
BIRDBOOT: What?
MOON: Half afraid that I will vanish when he does.
(*The phone rings.* SIMON *picks it up.*)
SIMON: Hello?
MOON: I wonder if it's the same for Puckeridge?
BIRDBOOT AND SIMON (*together*): Who?
MOON: Third string.
BIRDBOOT: Your stand-in?
MOON: Does he wait for Higgs and I to write each other's obituary—does he dream----?[37]

The introduction of Puckeridge is immensely significant in terms of studying binary structure:

now it becomes apparent that what Moon has described as a binary existence is no real binary at

all. The binary structure Moon attempts to define breaks down into multiplicities when reality is

looked at as a whole. And in the play's end, it is this shadowy third string figure that triumphs in

an unlikely chain of events. Puckeridge attempts the *coup d'etat* that Moon only dreams of,

killing Moon and Higgs, and taking the role of the real Inspector Hound:

MAGNUS: Yes!—I am the real Inspector Hound!
MOON (*pause*): *Puckeridge*!
MAGNUS (*with pistol*): Stand where you are, or I shoot!
MOON (*backing*): Puckeridge! You killed Higgs—and Birdboot tried to tell me---
...
CYNTHIA: So you are the real Inspector Hound.
MAGNUS: Not only that!—I have been leading a double life—at *least*![38]

Here Puckeridge/Magnus describes a central theme in the play: at *least* a double life, but most

likely more. He is describing the breakdown of binaries within one person, another level of the

breakdown within the play. Puckeridge, in his existence and his victory, functions as a bringer of

ordered chaos and a breaker of binaries in the play.

In terms of the three characters—Higgs, Moon, and Puckeridge—and their operations

together, the binary structures are left ambiguous. At the end of the play all three are brought

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[37] Stoppard 13
[38] Stoppard 44

together—indeed, Higgs has actually been present in the entirety of the play, as the dead body on the stage of the play that Moon is critiquing. So Moon's point about his presence precluding Higgs' absence is questioned: does it matter if Higgs is dead? How does Puckeridge exist in this defined binary? But another of Moon's points is answered: Higgs dies, and he ceases to exist shortly thereafter. The third string, however, does not. He continues on. The complex relations between these three characters are messy are unable to be defined by Moon's first explanation, which is rooted in the classical understandings of binaries and categorization. On this character level, *The Real Inspector Hound* shows binaries breaking down into multiplicities and binaries that are not able to be categorized cleanly—ones that require further definition. The relations between these three characters leads us to a search for the redefinition of binary categorizational models, which in turn leads to prototype theory. *The Real Inspector Hound* can be viewed as a model or an example of the breakdown of the binaries from the classical theory into meaning based on complex, multiple emotions.

Stoppard's *The Real Inspector Hound* functions as a thought experiment in which he most obviously questions and parodies the typical plot of a murder mystery, and where he also questions the definition of binaries and the naturalness of their breakdown. Stoppard's play both reflects and questions the breakdown of binary categories in reality. The breakdown of binaries into multiplicities, argued by prototype theory, deconstructionism, and Stoppard's play, as well as many more modern and contemporary fields of study, means that the natural human perception of objects and concepts is dependent on and described by family resemblances or, similarly, ICMs. Conceptions are based on relativity, but not on binary opposition.

It is because these concepts are based on relativity that *The Real Inspector Hound* is able to upend notions of reality. The purposed binary structure of reality at the play's beginning exists

between the two critics, who are living in the 'real' world, and the characters on the stage, who are acting. Because it is not a performance in the sense that it is on stage, the world of the critics Moon and Birdboot at first seem to be more real than the reality of the other characters, who act as part of this play. This is because our more prototypical conception of reality is that it is not a performance, that there is something genuine about these people and the world that they live in. Because this prototypical conception of reality has the trait of an occurrence that has not been constructed by performance, this world appears more real.

It is this comparison between the two proposed realities within the play, and the acknowledgement of one reality as a better prototype of reality in that category, that creates meaning within *The Real Inspector Hound*. Because one of the realities in the play was conceived of as less real than the other, the two different realities in the play were seen as binary and contrasting, and therefore when the plot moves forward into a mixing of the supposed opposition between reality and performance, the reader or viewer of *The Real Inspector Hound* is thrown off by the mixing of a preconceived binary opposition. The breaking down of binary oppositions, then, is dependent both on a comparison between two different realities and on an understanding of the prototypicality of each of these different proposed realities. Knowing that one reality—that of Moon and Birdboot—is more prototypical lends the reader to believe that, by contrast, the performed stage reality is fake. This mixing of the supposed binary breaks down those assumptions, and therefore the comparison between the two realities within the play leads to the idea that reality is inherently a performance.

This breakdown and mixture of the binary of reality versus performance also dissolves into a multiplicity, since the comparison between the 'real' world in the play and the performed world leads the reader to consider a comparison between the 'real' world outside of the play and

the realities within it. The mixture of reality and performance within the play, then, causes the reader to consider a breakdown of the real/performed binary in the world outside of the play.

The Attraction that Newton Left Out in *Arcadia*

Published theories and criticism of Stoppard's *Arcadia* have not dealt with prototype theory as a critical lens before for this text. Stoppard's *Arcadia* has been viewed from a deconstructionist or postmodern viewpoint, as well as from various more scientific lenses. Since the play is focused around chaos theory and is often cited as a result of Stoppard's reading of Gleick's *Chaos: Making a New Science*, the play has also been looked at from the lens of chaos theory and from the viewpoint of quantum physics, which is similar.[39] In order to look at *Arcadia* from a prototype theory lens, this paper will use Lakoff's 'mother' ICM and the binary checklist as examples and techniques to look at the different definitions of romantic love within the text, and how these different kinds of love drive the plot.

Lakoff's version of a cluster model, ICMs, similar to Wittgenstein's family resemblances and Jackendoff's cluster concepts, attempts to describe the underlying structure that gives rise to effects of prototypicality in categories. For his argument for cluster models showing typicality effects, Lakoff uses the many different conceptions of a mother to show that the ideal and prototypical mother would be considered the one that fits into all of these categories. He first attempts to define mother using a single definition, but he fails to do so, because "no such definition will cover the full range of cases. *Mother* is a concept that is based on a complex model in which a number of cognitive models combine, forming a cluster model."[40] Since the concept of mother cannot be defined by one set of conditions, Lakoff develops several

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[39] See Miller's "From Fears of Entrophy to Comfort in Chaos," Vees-Gulani's "Hidden Order in the 'Stoppard Set'," Demastes' "Portrait of an Artist as Proto-Chaotician," and Powell's "Dualism is the Word."
[40] Lakoff 74

definitions of mother, in order to fully cover the concept. The types that Lakoff outlines are as

follows:

> "—The birth model: The person who gives birth is the *mother*.
> ...
> —The genetic model: The female who contributes the genetic material is the
> *mother*.
> —The nurturance model: The female adult who nurtures and raises a child is the
> *mother* of that child.
> —The marital model: The wife of the father is the *mother*.
> —The genealogical model: The closest female ancestor is the *mother*."[41]

Since 'mother' cannot be defined with a single set of conditions, we move past the binary

division of 'mother' and 'not-mother' into a multiplicity of different but overlapping

definitions.[42] The concept of a "real" mother is dependent on choosing one of these definitions

over the others, and "when the cluster of models that jointly characterize a concept diverge, there

is still a strong pull to view one as the most important."[43] However, the idealized version of the

mother is only found where these disparate definitions overlap with one another, where they

cluster: these types of mother are "all mothers by virtue of their relation to the ideal case, where

the models converge. That ideal case is one of the many kinds of cases that give rise to prototype

effects."[44] The best example of a model, therefore, is found where all five of the definitions set

out by Lakoff are present.

This web of interconnections as the determiner of prototypicality is similar to the way

that the robin is proven to be a prototypical bird with the binary checklist. A robin is an exemplar

of the bird category because it has many traits in common with the other members of that

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[41] Lakoff 74

[42] Though, Lakoff says, "because of the complexities of modern life, the models in the cluster have come to diverge more and more" (75). This can be likened to Lyotard's view of our current society as well as the aforementioned tendency in the sciences and in literature towards the breakdown of the law of non-contradiction.

[43] Lakoff 75

[44] Lakoff 76

category. In the same way, the ideal 'mother' becomes more ideal when it shares more traits with the different definitions of that concept. So, the ideal mother would be found at the convergence of all the definitions, the supposed center of the cluster in the cluster model. This is why our idea of a prototypical mother is nurturing as well as biologically and genetically connected with her child or children, and this is where the extensions of the word mother, like the phrase 'to mother someone' or the term 'step-mother' come from.

The concept of love, like that of the mother, cannot be described by sufficient and necessary conditions. Even within the narrower confines of the concept of romantic love, the concept requires multiple definitions. In order to define prototypical romantic love, one would need a checklist of likely traits, like the checklist of traits found among birds earlier on. Traits of ideal love could include mutual feelings, lust or desire, equal status, enduring feeling, deep connection, and marriage, among others. These traits can be separated into several defining models, as Lakoff's concept of mother is separated: the mutual model, the carnal lust model, the equal model, the enduring model, the deep model, and the marriage model. The different concepts can also be put into a checklist form, as the traits for the category bird were:

Love Type	Mutual admiration	Lust	Equality	Enduring Feeling	Deep	Marriage

Then, based on the checklist table, the traits can be viewed as a series of descriptive binaries as follows, with the first of the pair being the one which increases prototypicality and brings the love closer to the ideal concept[45]: mutual love vs. unrequited love, lust/desire vs. non-

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[45] It is important to note the difference in the use of the words 'better' and 'ideal.' In the context of prototype theory, the best member of a category or the closest model to the ideal concept means only that that member or model is closer to the prototype of the category, not that that member or model is superior in any way other than in its goodness as an example in that category.

sexual/innocent, equal status vs. non-equal status, enduring feeling vs. temporary feeling, deep connection vs. superficial connection, marriage vs. non-marriage. This series of binaries is helpful in the analysis of love within *Arcadia*, because each type of love found within the text can be determined as having one side of each binary, similar to the way that binaries are set up and one is seen to be privileged in an application of deconstructionism, and from this analysis the prototypicality of each type of love found can be ascertained.

Arcadia contains a multitude of love connections. Both in the play's past storyline and in the present day, the characters make unpredictable connections of romantic love that span a multitude of types. Miller goes so far as to claim that "people make unexpected choices about whom to have sex with, and these throw kinks in what should be a fairly predictable set of events."[46] The non-prototypicality of the love examples revealed within the text are what function as catalysts to move the plot forward. They are the "heat" that moves the play forward from past to future. These love connections function as the driving force of the plot, comparable only with the mirrored driving force of lust for knowledge.

Just as Thomasina, the novel's heroine, discovers that "Newton's equations go forwards and backwards, they do not care which way. But the heat equation cares very much, it goes only one way,"[47] love is understood in a conversation between the characters of Chloë and Valentine to be "the attraction Newton left out. All the way back to the apple in the garden." As Chloë says, "the universe is deterministic all right, just like Newton said, I mean it's trying to be, but the only thing going wrong is people fancying other people who aren't supposed to be part of the plan." This "people fancying other people" is the non-prototypical love that is found throughout

[46] Miller, Kristen. "From Fears of Entropy to Comfort in Chaos: Arcadia, The Waste Land, Numb3rs, and Man's Relationship with Science." *Bulletin of Science, Technology & Society*. 27.1 (2007): 81-94. Web, p. 89.
[47] Stoppard 87

the text. This non-prototypical love, just like the heat that Thomasina talks about, moves only

forwards, as opposed to the rest of Newton's proposed completely deterministic universe, which

moves both backwards and forwards. This is because atypical examples, like the non-

prototypical loves shown in *Arcadia* tend to lead to friction, which then leads to conflict

resolution, and this results in forward plot movement. As this exception to the deterministic

universe, non-prototypical love helps to drive the forward movement of the plot.

The love between Septimus and Mrs. Chater fits most closely into the model of carnal

lust. Septimus speaks without hesitation of the lust between them, telling Lady Croom "Chater

ran me to the ground, and I being in such a passion, in an agony of unrelieved desire…I thought

in my madness that Chater with her skirts over her head would give me the momentary illusions

of the happiness to which I dared not put a face"[48] In this conversation, Septimus denies the deep

model, the enduring model, the mutual model, and the marriage model of love. Thus, these

connections can be defined almost wholly by the lust model of love, with some lesser connection

to the equality model. This love, since it fits into only two of the six defined models of the love,

is fairly non-prototypical.

Septimus and Lady Croom, by contrast, seem to have a connection of mutual admiration,

since she is the happiness which Septimus cannot face, and since Septimus chooses her as one of

his two recipients of letters in the case of his death, the other being his pupil Thomasina. Lady

Croom receives Septimus' crude description of Chater as an unusual compliment.[49] There is no

overt sexual encounter between these two characters, they are not on an equal level socially, and

they are not married. Their connection, therefore, can be seen as closest to the mutual model of

love, with connection to the models of deep connection. However, neither the relationship

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[48] Stoppard 72
[49] Stoppard 72

between Septimus and Mrs. Chater nor the relationship between Septimus and Lady Croom can be seen to be a prototypical version of love or close to the idealized version of love.

Within the present day of the play, the connection between Gus, the "genius" brother of the household, who does not speak, and Hannah, one of the researchers, is the most non-prototypical example of the love found in the play. Gus loves Hannah, as is shown when Chloë tells Hannah "My genius brother will be much relieved. He's in love with you, I suppose you know"[50] followed by Gus presenting Hannah with an apple. This love is unrequited and innocent, and therefore connects directly with the opposite pair in the binaries of mutual vs. unrequited and lust/desire vs. non-sexual/innocent. The deepness of the love is not presented with any textual support, and the love is enduring for the extent of the play, though the play covers only a short amount of time in the present day chronology. The love is non-equal, since Gus is from a higher class, and it falls into the non-marriage side of the binary.

Bernard and Hannah, within the present day, also provide a non-prototypical example of love. It is non-requited, partially lustful, equal, temporary, superficial, and non-marriage. Bernard shows interest in Hannah early on, but she rejects him coldly, and Bernard quickly turns to Chloë.

The most central love in the play is that between Septimus and Thomasina, the play's heroine and the true genius. However, even this love which is more central in the play's plot does not show a convergence of a majority of the models set forth for romantic love. Septimus and Thomasina share a mutual and enduring attraction and a deep connection. This is shown through Septimus' repeated interest in Thomasina's ideas and his growing trust in them. By the

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[50] Stoppard 33

time she is sixteen, he gives her essay "an alpha[51] in blind faith."[52] However, they are not

married, nor are the two of equal status, since Thomasina is a lady and Septimus her tutor.

Thomasina is portrayed as innocent, partially because of her youth. Both times sex is mentioned

to her, her reply is "disgusting," and she degrades Cleopatra for her sexual tendencies.[53] Gus and

Hannah and Thomasina and Septimus can be paralleled in some ways, since Gus and Thomasina

are both innocent geniuses. In the last scene of the text, they are paralleled in the dance of the

two couples in the same space.

The binary checklist table for the four relationships described can be written as follows:

Love Type	Mutual admiration	Lust	Equality	Enduring Feeling	Deep	Marriage
Septimus and Chater		Y	Y			
Septimus and Croom	Y				Y	
Gus and Hannah				Y		
Bernard and Hannah		Y	Y			
Thomasina and Septimus	Y			Y	Y	

As is clear, none of the four relationships described provides a clustering of a majority of the

model definitions. They do, however, represent a variance of the love models. However, it is this

non-prototypicality present in the examples that acts as the exception to the planned universe and

functions as a driver for the play's plot.

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[51] In other words, a grade of an 'A' on her essay.
[52] Stoppard 96
[53] Stoppard 38

Septimus and Chater, for example, are most prototypical in their lust for one another, and the sex that they have in the play's beginning. However, it is the lack of the other models of love in this example that help to forward the plot. The absence of marriage, and the presence of Mrs. Chater's husband, lead to an argument between Septimus and Mr. Chater. Septimus also uses the prototypical trait in this love example, the lust, not to further this love but to appeal to Lady Croom.

Septimus and Lady Croom share an admiration that is mutual, and they fit into this proposed model for love, but it is the lack of equality and marriage, as well as the lack of shown sexual encounters, that further the plot. This secret love leads to Septimus' secret love letter and the resulting conversation between the two.

Gus and Hannah's connection is most notable for its non-prototypicality. It contains only one trait in the chart, and it exemplifies two opposite sides of the prescribed binary series. However, this love is a driving force in the plot because of its atypical nature: Hannah accepts a dance from Gus, instead of other men, particularly Barnard, in part because of the innocent nature of the love. The unprivileged sides of the binary that are exemplified in this love example drive the connection between the two people. The love is not only not lustful, but is purposely innocent, since Gus does not speak and seems to have some mental disability. Again, the love example is purposely unrequited because Hannah does not respond well to the men in the play except to Valentine, and seems bent on ignoring all forms of prototypical love. This love that Gus shows for Hannah, however, eventually wins her over in some small way because of the innocent nature of Gus' admiration, and leads to the final parallel between the two time periods. Similarly, the unrequited love between Hannah and Bernard aids the plot structure because

Bernard, as a result of being rejected by Hannah, is driven to be with Chloë, which in turn drives Hannah to accept the dance from Gus.

Septimus and Thomasina's love comes the closest to a prototypical love and to the ideal love within the ICM models set forth. This connection provides impetus through the tension of the non-prototypical unequal status between the two, culminating at the play's end in Thomasina sneaking to Septimus in the middle of the night. The prototypical aspects of this love example do not serve to drive the plot and produce tension in the way that the inequality of status, which leads to Thomasina's action, sneaking into Septimus' rooms at night, and therefore to the plot's biggest twist, Thomasina's death. The innocent, rather than lustful, nature of the love as well builds tension and leads to the secrecy that perpetuates the plot action.

Within *Arcadia*, the non-prototypical nature of each love example serves to further the plot and action. This is because strange and atypical examples tend to lead to friction and conflict and therefore to conflict resolution, which results in forward plot movement. Within *Arcadia*, additionally, these non-prototypical examples of love can be paralleled with the second law of thermodynamics, which is about the loss of heat, and which Thomasina discovers as proof that Newton's theory is not completely descriptive. In the same way, these non-prototypical and therefore more unpredictable examples of love serve to break the planned, deterministic laws of Newton's universe and as a result to move only forward.

Conclusion

Prototype theory and deconstructionism are similar interdisciplinary theories, but the more structured model of prototype theory allow for a closer look at some of the language structures built into texts, especially in the text of postmodernists and language-heavy writers like Stoppard. Prototype theory was a reaction against the classical theory and reflects the reality

of the way that humans conceptualize categories. It, most importantly, teaches that categories and words themselves are based on degrees of membership, meaning that one member of a category can be a better or more prototypical example than another, and that these prototypicality effects are based on a cluster model, where meaning is built up from a web of interconnected linguistic and social information. Deconstructionism, a reaction against structuralism, says that words are arbitrary and that concepts or words are composed of a chain of signifieds, a web of interrelated knowledge coming from both linguistic and social knowledge where the meaning is always deferred. Derrida, the founder of deconstructionism, proposed a différence where meaning in language is only able to be built upon the differences found. These two theories are similar in their reactionary origins, their breakdown of binaries in both language and concepts, and their proposal of meaning as built up from a web of interrelated knowledge. However, prototype theory, because of its mathematical background, is able to provide a way to quantify the differences and similarities between examples in a text; it provides a model for conceptualization after the binary is broken down.

An examination of both theories serves to demonstrate the multiple similarities, and to show as well the differences and limitations of each theory. An analysis and discussion of the binaries in *The Real Inspector Hound* provides an example and a mirror of the binary breakdown and re-setting up posited by each of the two theories. Finally, an application of prototype theory to the text of *Arcadia* by examining the different types of love present in the text for prototypicality draws new connections between the actions of heat and love within the text and provides an example of a prototype theory application.

Red is not defined by its opposite,[54] green, as it would be in a binary opposition, or by the binary set up of "red/not red" that is found in the stricter definitions of classical logic and categorization theories. Instead the concept of red is defined by and built upon the multiple relationships it has with other colors. Red is defined as red because it is very not like green, it can be sort of purple, or sort of orange, it is darker than pink, etc. Red is defined by our understanding of all other colors. Each color is therefore defined by its various relationships with the other colors that are part of the human visual spectrum.

This perception of categorization can be extended, of course, beyond the realm of color. Just as Derrida attempted to define concepts and words based of the connections already in place in context, and meaning through his *différence*, the difference between concepts, human cognitive categorization overall is dependent on both the relation between one object and others like it as well as between that object and its opposite. Categorization and, by extension, conceptualization, is dependent not only on Derrida's *différence*, but on the similarities between concepts, as proposed by prototype theory. Human categorization processes depend on this interlocking web of relations, of the differences and the similarities between a multiplicity of concepts, instead of on the binary understandings of older classical theory. Deconstructionism, with its reaction against structuralism and basis of anti-order, meets well with prototype theory, which provides a theory that is as messy as reality.

Possible avenues for further exploration on this topic would include the development and exploration of a combination theory, where Derrida's *différance* would be combined with the buildup of meaning based on similarities between concepts that is posited by prototype theory. The two theories discussed here would work together in tandem to re-build meaning that has

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[54] This opposite exists both on the color wheel and as part of opponent process theory.

been broken down from assumed binary constructs. Also important would be an application of prototype theory to other texts and to other critical theories. Since prototype theory provides a quantifying model for concepts, its application or combination with other critical theories could further the critical reading of a text or provide more structure within that reading.

Prototype theory allows for the mess of reality because, unlike classical theories of categorization, it attempts to describe effects of prototypicality found in the reality of human conception and categorization. Prototype theory can both be described by literature in terms of the breakdown of binaries and can be used as a critical lens in the text to analyze and discuss the prototypicality effects of themes within the text in order to draw new conclusions.

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