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**Hedonic and
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Conceptions of Value**

**Joel M. Podolny
Marya Hill-Popper**

Joel M. Podolny,
Marya Hill-Popper,
Harvard University

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Hedonic and Transcendent Conceptions of Value

by

Joel M. Podolny and Marya Hill-Popper
Harvard University

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Abstract

In this paper we introduce a conceptual distinction between a hedonic and transcendent conception of value. We posit three linguistic earmarks by which one can distinguish these conceptions of value. We seek validation for the conceptual distinctions by examining the language contained in reviews of cars and reviews of paintings. In undertaking the empirical examination, we draw on the work of M.A.K. Halliday to identify clauses as fundamental units of meaning and to specify process types that can be mapped onto theoretical distinctions between the two conceptions of value. Extensions of this research are discussed.

I. Introduction

Over the last two decades, organizational and economic sociologists have devoted considerable energy to applying a sociological lens to the operation of the market (Baker 1984, Burt 1988, Podolny 1993, White 2001, Zuckerman 1999), and yet despite this interest in the market's operation, there has been surprisingly little discussion of the concept of value, which seems so central to any understanding of market exchange. To be sure, there has been some sociological interest in the concept of money as a measure and store of value (Carruthers and Babb 1996, Zelizer 1989). Perhaps even more notably, recent work by Kocak (2003) links the patterns of exchange relations in markets to the relative importance of two problems of value -- the problem of non-standardization and the problem of interdependence -- surrounding the trading of a given good.

However, despite this work that is clearly linked to the understanding of value, the concept of value itself – *as defining a particular orientation of an individual to an object of exchange* – has not received much sociological attention. If only to underscore the extent to which the concept seems undertheorized in current organizational or economic sociology, Marx felt that the concept was of sufficient importance that he began *Capital*(1977[1863]), his most comprehensive and thorough critique, with a detailed elaboration of the concept of economic value, in which he distinguishes exchange-value from use-value and contends that labor power is the fundamental basis of exchange-value. As Sørensen (1996) recently observed, there are few if any serious adherents to Marx's labor theory of value, and accordingly, there are few if any serious adherents to his conception of exchange-value. And yet, in drawing a distinction between use-value and exchange-value, Marx introduced the more general idea that there can be systematic differences in the way in which individuals in exchange contexts are oriented to objects. Moreover, his distinction between use-value and exchange-value suggests an important axis along which orientations to objects can be distinguished. He highlights that an individual's perception of the value of an object, can be grounded in a detailed focus on the numerous idiosyncratic features of that object or in a comparative

assessment of the object in terms of general attributes that can be measured across multiple objects.

To capture this axis of orientations in a more direct way than is suggested by Marx's conception of use-value and exchange-value, we will introduce a new conceptual distinction between "hedonic" and "transcendent" conceptions of value. While we might be able to develop the understanding of different orientations by employing Marx's own wording, our view is that there is too much conceptual baggage associated with this Marx's terms. Therefore, we think that a new terminological distinction is in order. After elaborating the distinction between a hedonic and transcendent conception of value in some detail, we then discuss some linguistic earmarks of these different value conceptions. That is, we posit that these different value conceptions lend themselves to differences in the way that people speak and write about the goods that they are contemplating in the market. We then undertake a very preliminary data analysis to illustrate how one might test for the prevalence of a particular value orientation in a particular exchange context. Finally, in the conclusion, we discuss some possible extensions of this research.

II. Hedonic and Transcendent Conceptions of Value

Though there are many contexts on which one could focus for the purpose of articulating the distinction between hedonic and transcendent conceptions of value, we take Harrison and Cynthia White's work *Canvases and Careers* (1993) as our point of departure. In that work, the authors unpack the institutional change in French painting that coincided with the rise of the Impressionists in the late 19th century. Throughout the century preceding the Impressionists' rise to prominence, the French art world was dominated by what White and White call "the Academic system". Under this system, the value of a painting became established through a competition among canvases against the backdrop of standards elaborated by the French Academy. The competition would unfold annually throughout the French salons, with the Paris Salon being the most important. As of the mid-nineteenth century, anywhere from two thousand to five thousand paintings would be exhibited in the Paris Salon, and a jury of 8 to 12 would award medals of different levels to some fraction of those exhibited. This tournament

system was the “main instrument for the review, reward, and control of painters seeking official recognition” (White and White, p.31). The value of a work emerged through direct comparison to and competition with other works; the best works were those that most conformed to the standards of quality elaborated by the Academy.

By the end of the 19th century, the Academic system began to dissolve. Salons started to lose their role in the conferral of value, and what White and White term “the dealer-critic system” arose in its place. Under this new system, the value of a painting is not anchored in a rank ordering that arose from an explicit competition with other works. Rather, the value emerges and is augmented to the extent that the consumer of the art becomes cognitively and emotionally drawn into the work itself. The value of the work lies dormant if the consumer is a passive observer of the work; the value reveals itself only through the consumer’s own investment of time and energy in understanding and experiencing the work. Under the dealer-critic system, the critic serves not simply as a judge of the work but as a guide to the work’s significance. As White and White write, “These critics invited the public to understand and admire the technique and theoretical knowledge of the artist and to make its value judgments in these terms.” White and White cite the example of the art critic Duranty who commented on the Impressionist Exhibition of 1876 in his pamphlet *La Nouvelle Peinture*:

In the field of color, they have made a genuine discovery whose origins cannot be understood elsewhere....The discovery properly consists in having recognized that full light decolorizes tones, that sunlight reflected by objects tends, by virtue of its clarity, to bring them back to the luminous unity which dissolves its seven spectral rays into a single colorless refulgence, which is light. From intuition to intuition, they have succeeded in splitting the light into its beams, its elements, and in recomposing its unity by means of the general harmony of the colors of the spectrum which spread upon the canvases....(White and White, p.119)

Even though exhibitions and shows under the dealer-critic system bore some broad resemblance to salons in so far as both were vehicles for the public display of works, the purpose of exhibitions and shows was quite different than the purpose of salons. The exhibitions served not as competitions among numerous painters, but as vehicles for presenting multiple works of a single artist and thereby enhancing the understanding of each individual piece. Even group shows, such as the one on which Duranty comments,

do not place artists in competition with one another. Rather, as Duranty's comments imply, they serve as a vehicle for a collective statement that gives added meaning to each work by placing it in the context of a greater whole.

A number of scholars in the 20th century have elaborated a theory of aesthetics that resonates with the conception of value implicit in the dealer-critic system. In his work *Art as Experience* the philosopher John Dewey writes that the value of art arises from the sharing of an emotional and contemplative experience between the artist and the consumer of the art. Dewey laments the fact that there is no term that co-joins what is signified by the word "artistic" and "aesthetic". In his view, the value of art lies in the confluence or melding of artistic production and aesthetic appreciation. In commenting on the production side, Dewey writes, "The doing or making is artistic when the perceived result is of such a nature that its qualities as perceived have controlled its production (p.48)." Then, commenting on the consumption side, Dewey writes:

The sensory satisfaction of eye and ear, when aesthetic, is so because it does not stand by itself but is linked to the activity of which it is the consequence. ..[T]he pleasures of the palate are different in quality to an epicure than in one who merely "likes" his food as he eats it. The epicure is conscious of much more than the taste of the food. Rather, there enters into the taste, as directly experienced, qualities that depend on reference to its source and manner of production. (p.49)

According to Dewey, the value of a work of art does not emerge from a consumer directly comparing multiple artistic offerings. Rather, the value of the art hinges on the extent to which the artist and the consumer are able to fully understand and empathize with the other's experience of their mutual exchange.

In this paper, we seek to generalize the distinction between the conception of value implicit in the Academic system, on the one hand, and the conception of value implicit in the dealer-critic system and in Dewey's aesthetic on the other. The Academic system is a vivid illustration of the *hedonic conception of value*—a consumer's perception of the value of an exchange offering is contingent on how that offering directly compares to other exchange offerings on a set of abstracted dimensions. Under this conception of value, the consumer essentially takes on the role of judge, maintaining sufficient social distance from any particular object that he or she can

effectively adjudicate among alternative offerings based on clearly defined standards. As part of the hedonic assessment, the evaluator conceptually decomposes the objects being evaluated into key attributes (where the understanding of those “key” attributes is generally institutionalized across an entire exchange domain), then rates the objects on each of those attributes to arrive explicitly or implicitly at a final summary score for those attributes. The standard rating scheme employed by *Consumer Reports*, where products within a market are scored on a number of dimensions and then these different scores are aggregated to yield a final judgment, typifies a hedonic conception of value.

The conception of value implicit in the dealer-critic system and in Dewey’s aesthetic is a *transcendent conception of value*, in which the value that the parties derive from the exchange depends on the extent to which each becomes invested in the vantage that the other has regarding the object. Under this conception of value, the consumer does not seek to maintain social distance from a particular producer or object. Indeed, much of the value from the exchange arises through the reduction in social distance that comes about through a common identification and understanding that is induced by the producer’s particular creation. Whereas the hedonic conception of value implies a conceptual decomposition of the object into attributes, the cognitive and emotional connection at the heart of the transcendent conception of value implies a much more holistic approach to valuation.

The hedonic conception of value is obviously the conception of value that has the strongest affinity with prevailing view of markets. Indeed, there is a sizeable economic literature on hedonic models of markets, where the value of an object to a particular consumer depends on how that object compares to others on some abstracted, differently weighted dimensions (e.g., Epple 1987, Feenstra 1995). Under the transcendent conception of value, in contrast, other objects may enter into a consumer’s assessment of the worth of an object, but they enter in primarily for the purpose of enhancing the understanding of the meaning of the focal work and not for the purpose of developing a common standard against which multiple works may be compared. For example, the 20th Century American painter Barnett Newman’s abstract work *Vir Heroicus Sublimus* is 7 feet 11 3/8 inches by 17 feet 9 1/4 inches. As is obvious to anyone aware of the difficulty encountered by painters for centuries in stretching a canvas to such proportions, such a

size for a painting on canvas is remarkable (de Bolla 2001). Of course, the significance of this feature can only be established through comparison to other canvas paintings, but its establishment as significant does not imply that it is now a general standard against which multiple works are to be valued. In effect, under the transcendent conception of value, other works may be drawn into the evaluation of a particular work as idiosyncratic touchstones, but they are not drawn in for the purpose of establishing some common metric that would apply across multiple works.

In the conclusion to this paper, we will discuss several implications of this distinction between a transcendent and hedonic conception of value for future research, focusing in particular on some of the contingencies that we anticipate will impact upon the dominance of one conception of value over another. However, at the outset, it should be clear that the prevalence of a transcendent conception of value implies greater market segmentation, whereas the prevalence of a hedonic conception of value implies less such segmentation. Moreover, the more that consumers are attending to abstract standards, the less they will be attending to idiosyncratic features whose value will only be realized through time and energy devoted to establishing a common understanding with the producer. Therefore, as a practical matter, one is likely to see less experimentation and variation in contexts in which the hedonic conception of value predominates.

Though we run the risk of “academic naval gazing”, one does not need to look much further than the effect of rankings on competition among business schools and perhaps academic institutions more generally for an example of how the prevalence of these different conceptions of value can impact on the behaviors in which the providers of goods or services engage. The increasing attention that business school alumni and MBAs pay to school rankings is clearly an example of a shift to a more hedonic conception of value in the domain of MBA education. Such a shift carries with it an inherent passivity on the part of the students toward their education. Students come to see themselves as choosing among various schools, each offering to deliver them something different. They do not see themselves as looking for a relationship with an institution whose value emerges as much from the investment that the students make in embracing the “mindset” of the institution as from any deliverables that are provided to them.

More traditional market examples of the interplay of these conceptions of value arise around producers for whom authentic identity is a competitive advantage. While we are reluctant to delve into anecdotal data before opening up a more systematic analysis, a few such examples probably help to give a better sense of the phenomenon to which we are referring. For example, consider Apple Computer, Ben & Jerry's ice cream, or the Body Shop. None of these firm's claim to superior value rests exclusively on a hedonic comparison with competitors or substitutes; rather, the claim to value rests to a large degree on prodding and encouraging the consumer to approach their product in way that is quite reminiscent of Dewey's aesthetic. Ben and Jerry's invites the consumer to not only contemplate the taste of the product, but to contemplate the way in which the product was produced as well as the personal objectives of those leading the company. The more that the consumer knows of and identifies with the values and practices of Ben and Jerry's, the greater will be the value that the consumer derives from consumption of this particular good. Indeed, while we wish to re-emphasize the anecdotal nature of this data, it is worth noting in passing that all three of the companies are ones in which the identity of the founder is a critical element in the evaluation of the product. It should not be surprising that the identity of the founder or leader of a firm is more important when the mutual identification of the consumer and producer through a product is an essential component of the value of the exchange.

As we move out of the domain of art into a broader array of exchange domains, it will become clear that the distinction elaborated here echoes elements of the distinction between arms-length transactions and relational contracts. The parallel is perhaps clearest in Uzzi's (1997) discussion of the different types of search that take place in arms-length transactions and relational contracts between clothing manufacturers and their suppliers. As Uzzi observes, the search process for solutions to market problems is "broad" when a market actor relies primarily on arms-length transactions with suppliers; that is, the clothing manufacturer looks broadly across all suppliers to identify the ones that best enable the manufacturer to address whatever problems it is confronting. However, when a clothing manufacturer relies on relational contracts, the search for solutions is "deep" within transactions.

However, while there is a connection between the hedonic conception of value and arms-length transactions and between the transcendent conception of value and relational contract, it would be incorrect to assume that the conceptions of value are simply cognitive manifestations of these different organizational forms. An actor can adopt a transcendent conception of value in evaluating an offering of another without necessarily possessing or contemplating the formation of a relational contract with that other. So, when an individual adopts a transcendent conception of value in considering the value of a painting by Cezanne, that individual does not necessarily enter into a relational contract with either Cezanne or the gallery that is offering Cezanne's work.

An interesting and important research question is whether the prevalence of arms-length transactions or relational contracts in a given domain is affected by the conception of value that predominates in that domain. In this paper, we will not answer that question. Other questions need to be addressed first. In particular, how can one empirically distinguish the extent to which an individual subscribes to a hedonic or transcendent conception of value in his or her evaluation of objects?

III. Linguistic Earmarks of Hedonic and Transcendent Conceptions of Value

To empirically distinguish these conceptions of value, we look at the language that producers, consumers, and critics use to talk about the quality of offerings in the market. In focusing on language, we necessarily assume that language is both the mirror and the lens for conceptions of value and quality in exchange contexts. That is, we assume that the language that one uses for talking about value and quality is a reflection of the underlying understanding of value and quality, and since it is a reflection, language is therefore a tangible guide to those perceptions.

While there is some work within the field of cognitive psychology that questions the extent to which language sets bounds on all perception, we believe that it is still reasonable to assume a correspondence between language and perception in domains, like markets, that depend on coordinated social action. Put simply, if there were no coordinated understanding of quality in an exchange domain, then both producers and consumers would make numerous mistakes in their investment of time and resources directed toward exchange (White 2001). Therefore, both producers and consumers have

an interest in achieving a coordinated understanding of quality, and language will be an important medium for achieving that coordination. In suggesting that both producers and consumers have an interest in a coordinated understanding of quality, we are not assuming that they will always agree or that coordination will always be successful. We only assert that the need for coordination creates a motive for the various participants in an exchange domain to articulate their understanding of quality since such articulations will facilitate the coordination.

As we look at the language that producers, consumers, and critics use for characterizing value and quality, we will have three analytical foci. First, we will focus on the extent to which the identity of the producer is considered in conjunction with the evaluation of the producer's offering. Second, we will focus on the extent to which the evaluation is characterized in terms of a deep emotional and/or cognitive impact on the consumer. Third, we will focus on the extent to which the terminology of evaluation is at a level of generality that facilitates comparisons across multiple offerings. While there are potentially other foci toward which our analysis could be directed, we believe that these three foci are especially important in distinguishing the language that will be employed by a market actor adopting a transcendent conception of value and one adopting a hedonic conception of value.

Let us discuss each of these foci in more detail, beginning with the extent to which aspects of the producer's identity are considered in conjunction with the evaluation of the producer's offering. If one examines reviews of objects – regardless of whether the object is a painting, a car, or wine – one often observes references to the identity of the producer along with references to the object itself. So, when an artist's paintings are reviewed, the reviewer will often devote attention to events in the author's life. Or, consider the following quote from a *Car and Driver* review of the 2000 Chevrolet Impala: "The shape of the sheetmetal, which is the work of Chevrolet chief exterior designer John Cafaro (who was also the lead designer of the C5 Corvette) is crisp and modern..." Why did the reviewer believe that it was appropriate or necessary to include information on the identity of the designer?

To the extent that one adopts a hedonic conception of value, information on the identity of the producer might be relevant for signaling purposes. That is, as an

individual is comparing across multiple producer offerings, the individual might find some information about the producer's identity relevant to making inferences about the quality or worth of the offering. For a painter, information on the price that the artist has obtained for his or her work in the past might be regarded as a signal of the past quality of the work. However, the types of details that are frequently included about a painter – for example, the social circle in which the painter moves, individuals who inspired the painter at a young age, and so on – are not particularly relevant as signals. They will not say more about the quality of a painting than details about the actual painting. Moreover, it would clearly be a stretch to interpret the above *Car and Driver* quote as signaling information; while one might infer that the new Impala is sportier than in the past due to the fact the designer also worked on the Corvette, Chevrolet's most prominent sports car; the "sportiness" of the exterior is not an unobservable about which one has to make an inference. *Car and Driver* can much more easily show pictures of the Impala and then use words like "crisp" and "modern" to provide a linguistic accompaniment to the pictures if they wish to convey the sportiness of the new car.

Moreover, to the extent that a consumer adopts a hedonic conception of value, there are reasons to believe that attention to the non-reputational aspects of a producer's identity will ultimately be little more than a distraction from the standards against which the objects are evaluated. For example, if one adopts a hedonic conception of value and considers multiple paintings, information that one painter is old, another is young, and a third grew up in harsh socioeconomic circumstances is sufficiently idiosyncratic that is difficult to incorporate into a hedonic calculus.

On the other hand, to the extent that a consumer adopts a transcendent conception of value, information on the producer's identity, intentions, objectives, and own thoughts about the work is relevant to the value that the consumer derives from the work. In the case of the painting, the consumer derives more value from the work of art to the extent that his or her experience of the painting involves some emotional or cognitive connection to the artist. In the case of the car, the value that the consumer derives from the car is augmented by knowledge that the consumer has about Chevrolet's aspirations for the car, and the fact that Chevrolet allocated the time of its chief designer, who

previously worked on the Corvette, is information that enables the consumer to gain a better understanding of those aspirations.

Put simply, to the extent that a market actor – be the actor a critic or consumer – adopts a transcendent conception of value, we anticipate that the actor will attend more to the identity of the producer than if that same market actor adopts a hedonic conception of value. Under a hedonic conception, a market actor may attend to a few “key” facts about a producer, but under a transcendent conception of value, a market actor will attend to a much more extensive consideration of the producer’s interests, intentions, background, and thoughts.

In seeking to empirically distinguish the hedonic conception of value from the transcendent conception of value, our second analytical focus is the degree to which the evaluation is characterized in terms of a deep emotional and/or cognitive impact on the consumer. We anticipate that the more that a market actor adopts a transcendent conception of value, the more that her evaluation of the quality of a producer’s offering will be grounded in an assessment of its *subjective* emotional or cognitive impact rather than in terms of an *objective* assessment of what the consumer does with the offering. The rationale for this expectation follows almost directly from the way in which the transcendent and hedonic conceptions of value have been defined. Since transcendent value emerges from an emotional and cognitive state that is induced by an object, it is almost necessarily true that if one adopts a transcendent conception of value, then one must characterize the quality of that which is being evaluated in emotional and cognitive terms rather than in terms of what one is able to do with the object.

Granted, to the extent that one adopts a hedonic conception of value, one may try to compare producer offerings in terms of their emotional and cognitive impact. However, one might also compare those offerings in terms of tangible differences regarding what those offerings do. Indeed, to the extent that the consumer adopts the role of judge and tries to place himself at an equal social distance from all relevant producers and their offerings in making an assessment, there are good reasons to believe that the consumer will downplay emotional and cognitive impact and emphasize objective differences that have verifiable external indicators. In short, because the transcendent conception of value implies a near exclusive cognitive and emotional focus

in the assessment of impact whereas the hedonic conception allows for and (may in fact emphasize) what the consumer does in relation to the object, we expect that an actor adopting a transcendent conception of value will *on average* emphasize cognitive and emotional impact more than an actor adopting a hedonic conception of value.

Our third analytical focus will be on the level of generality characterizing the language of the evaluation. More specifically, we will focus on the extent to which the terminology of evaluation is at a level of abstraction that facilitates comparisons across multiple offerings. Words can differ in their level of generality. For example, a word like “vehicle” is more general than a word like “automobile,” which in turn is more general than a word like “sports car.” Similarly, a word like “artifact” is more general than a word like “painting,” which is more general than a word like “fresco”.

To the extent that a market actor needs to compare across multiple offerings, the market actor will need conceptual constructs and hence employ words that have a lower level of generality. Abstract terms like “beauty” or “meaning” are of limited value in facilitating an attribute-based comparison across objects. In contrast, there is reason to think that the invocation of such terminology may be functional given a transcendent orientation; as long as one does not need to rely on language to facilitate comparison across multiple objects, the reliance on such abstract terminology tends to convey a sense of importance. Consequently, we would expect more specific words and concepts from an actor adopting a hedonic conception of value than from an actor adopting a transcendental conception.¹

¹ This third basis for distinguishing value conceptions is related to a fourth potential basis. Just as we would expect a hedonic conception of value to lend itself to greater specificity in terminology, we would also expect a hedonic conception of value to lend itself to greater institutionalization of categories across which objects are compared. That is, one would expect greater repetition of the same specific terms. For example, in the market for cars, we anticipate that a term like “acceleration” might be repeated quite frequently. One could operationalize the institutionalization of terms with a “Herfindahl-like” measure reflecting the concentration of particular institutionalized nouns. We anticipate that the institutionalization of terms would be more associated with a hedonic conception because such institutionalized categories would facilitate comparison across objects. However, because we have only illustrative data collected for this paper (see analysis below), it is not yet possible to construct robust measures of the institutionalization of categories.

We thus have three linguistic earmarks that should distinguish a hedonic and transcendent conception of value. When evaluating an object, an individual subscribing to a hedonic conception of value should place less emphasis on the producer of that object, should focus more on external aspects of the consumer's relation with the object than on an internal emotional or cognitive aspect of that relation, and should be more likely to use language with a high level of specificity. Conversely, the evaluator subscribing to a transcendent conception of value should attend more to the identity of the object's producer, focus more on the emotional and cognitive impact of the object, and should rely on language at a lower level of generality less frequently than his counterpart subscribing to the hedonic conception of value.

IV. Validating the Empirical Distinction Between Value Conceptions

While we can identify these empirical earmarks, we need some validation strategy. Validation is, of course, problematic given that the transcendent and hedonic conceptions of value are themselves unobservable. In fact, it is precisely because these conceptions are unobservable that we need linguistic earmarks. One initial step toward validation of this distinction would be to identify two exchange domains that we anticipate will differ in terms of the prevailing conception of value. That is, we can find one exchange domain where we expect that the transcendent conception will be dominant, and we can find another exchange domain in which we expect that the hedonic conception will be dominant.

We then sample the statements of producers, consumers, and third parties such as critics regarding the quality of offerings in the market. If the exchange domain in which we expect the hedonic conception of value to predominate has the linguistic earmarks of that conception of value and if the exchange domain in which we expect the transcendent conception of value to predominate has the linguistic earmarks of the transcendent conception of value, then we believe that this could be regarded as some sort of validation.

We will focus here on cars and paintings. When evaluations from these domains are compared to each other, we expect that evaluations of cars will be more hedonic on average, whereas evaluations of paintings will be more transcendent on average. We

believe it is important to emphasize the qualifier “on average”. We do not regard either cars or paintings as necessarily extreme examples of one type of value or the other. For instance, we are confident that there exist exchange domains – say that for dishwashers – in which a hedonic conception of value is more pronounced than for cars.

Moreover, within each of these domains, we are confident that there will be variance in the degree to which evaluations conform more to a hedonic or transcendent conception of value. For example, evaluations of sports cars probably are more transcendent in their underlying conception of value than evaluations of mini-vans. Therefore, rather than deny the existence of more extreme types or denying variance within exchange domains, we argue that a systematic investigation of more cross- and within-domain variance is important to providing even greater validation for the theoretical distinction elaborated here. However, as a first step, we shall look at the linguistic differences across these domains.

We now proceed with an empirical analysis that is meant to be illustrative only. We rely on only a limited number of reviews – four reviews of cars and four reviews of paintings. In subsequent work, we anticipate not only looking at a greater number of reviews but also looking at whether there are systematic differences between the way that reviewers elaborate a conception of value and the way that producers and consumers elaborate a conception of value.

The four car reviews are obtained from the publication *Car and Driver*. The art reviews come from multiple sources. One is a press release from a gallery displaying the artist’s work; two are evaluations from Christie’s auction catalog, and one is from an on-line arts publication, artnet.com.

In looking at these reviews, we draw at least in part on M.A.K. Halliday’s (1994) functional grammar for guidance as to how we should analyze the language of evaluations. What is especially noteworthy about Halliday’s functional grammar is that he seeks to develop a grammar that is sensitive to the meaning conveyed by the text. Indeed, it is largely the focus on meaning that makes Halliday’s grammar *functional* rather than simply a *formal* grammar that identifies structural properties of a language abstracted from the content or meaning of the language.

According to Halliday, the fundamental unit of meaning is the clause, which typically consists of a subject and/or object linked to a verb as well as any modifiers of that subject, object, or verb.² As an example of how a given text can be parsed into clauses, consider the following excerpt from one of our painting reviews:

“Cvijanovic has indeed worked as a commercial artist, and one of the disconcerting aspects of his project is that he leaves you uncertain which realm you’re in, either commercial or ‘fine’.

The longer you look at Disco Bay, the more the virtuosity of Cvijanovic’s color starts to sink in. You know you’re not in anybody’s office: but where are you?” (Source *Artnet*)

This text is then parsed into the following nine clauses:

1. Cvijanovic has indeed worked as a commercial artist,
2. and one of the disconcerting aspects of his project is that
3. he leaves you uncertain
4. which realm you’re in, either commercial or ‘fine’
5. The longer you look at Disco Bay,
6. the more the virtuosity of Cvijanovic’s color starts to sink in.
7. You know
8. you’re not in anybody’s office:
9. but where are you?

To assist us in the parsing of texts, we use the Machine Syntax software, developed by Connexor. This software identifies or “tags” the parts of speech in a sentence as well as dependency relations among those words (i.e., it identifies the connections of nouns to verbs as well as the modifying relations between words). The identification of parts of speech and dependency relations greatly facilitates the coding of clauses.

Once the clauses are identified, we code them in two different ways. First, we define the orientation of the clause by its subject, and we divide orientations into four

² Notably, Halliday does not define a clause in terms of the more traditional grammatical terms of subject, object, and verb. Therefore, this definition is probably better regarded as a close approximation than as one that is completely accurate. However, in order to define a clause in exactly Halliday’s terms, it would be necessary to introduce a whole set of terms that are specific to Halliday’s grammar. Given that the purpose of this paper is not to fully expound on Halliday’s grammar, we believe that the definition given above employing more conventional grammatical terms is a sufficient approximation.

categories: producer, object, recipient, and other. The object denotes what is being offered. So, in this particular instance, when the subject is either the car or the painting, then the orientation is coded as being toward the object. The producer refers to any individuals or corporate entities that create the object. The recipient denotes the market actor that is contemplating the producer's exchange offering; so, when a critic writes a clause in which she or the consumer of the object is the subject, then this clause is coded as having an orientation to the receiver. Finally, there are other orientations that a clause can have. For example, if the review is of a painting and the subject of the clause is an artistic tradition, then such a reference would be coded as other. Or, if the review is of a car, and another model is referenced, this clause would be coded as having an "other" orientation. Figure 1 lists some examples of the different orientations of the clauses.

Figure 2 then presents the counts of these clause orientations for cars and paintings as well as the associated column percentages. For example, in the four car reviews, there were 222 clauses with an orientation to the object, and these 222 clauses represented 58% of the total number of clauses. For our purposes, the row of greatest interest is the first one. 13% of the clauses in the car reviews have a producer orientation; in contrast, 23% of the clauses in the painting reviews have a producer orientation. Consistent with our expectations, the reviews of paintings, in which we anticipated the transcendent conception of value to be more prevalent, reveal more attention to the identity of the producer. Especially given the small, non-random sample of reviews, one should not attach too much importance to whether these differences are statistically significant. However, a t-test of mean differences in producer orientation is statistically significant at the .05 level.

Our second analytical concern revolved around the extent to which the evaluations would be framed in terms of the cognitive or emotional impact on the receiver or whether the evaluations would be framed in terms of some objective measure of how the consumer relates to the object. Based on the preceding discussion, we expect that the reviews of paintings would focus more on the cognitive and emotional impact, whereas the reviews of cars would focus more on more objective characterization of what the consumer is able to do with or because of the car. To make this assessment, we need to focus on those clauses that have an orientation either to the object or to the receiver.

Orientations to the producer and orientations to “other” are not directly relevant to characterizing how the consumer and object relate to one another. However, in addition to focusing on these object- and receiver-oriented clauses, we need a systematic way for distinguishing whether the content of these clauses is focused on the more subjective or objective attributes.

Halliday is extremely helpful here. Halliday develops a typology of clauses for the way in which we experience the world. His typology is grounded in the different ways in which we communicate about experience. That is, he partitions experiences according to grammatical distinctions in the way that we communicate about what goes on around us. Figure 3 shows Halliday’s visual representation of the grammar of experience, partitioned into different types of processes. While space does not permit an exhaustive discussion of Halliday’s typology, we will review some of its main features.³

In this typology, there are three main categories of experience: material, mental, and relational processes. Material processes are those processes that pertain primarily to the external world. Mental processes are those that pertain primarily to the inner world of cognition and emotion. Relational processes are those that relate one aspect of experience to another; they are clauses of classification and identification.

We will first focus on material processes. As Halliday writes, these are processes of “doing”. So, the clause “The boy hit the ball” is a material process. Material processes may be more metaphorical than concrete. For example, the clause “The CEO eliminated a layer of management” is a material process even though there is no explicit physical act reflected in the statement.

Whereas material processes are processes of doing, mental processes are processes of sensing. For example, “The team felt humiliated” or “Tom saw the solar eclipse” are two examples of mental process. Halliday argues that mental processes can be distinguished from material processes according to five criteria. First, and perhaps most obviously, a mental process clause requires that at least one participant in the clause have or be imputed to have human or human-like consciousness. Halliday notes, for example, the awkwardness of combining the pronoun “it” with a verb denoting some type of sensing. For example, suppose the driver of a car used the following statement to

³ The more complete analysis can be found in Halliday (1994),pp.108-175.

characterize the strain on the engine: “I am sure it feels tired after the long drive.” While the statement is grammatically correct, it is sufficiently awkward that such a statement could only be treated as cute or strange since the statement would imply endowing the car with a consciousness.

A second distinction between material and mental processes relates to the use of the present tense for unmarked clauses.⁴ In a mental process, the unmarked present tense is the “simple present”, not what is called the “present in the present”. The distinction is probably best illustrated by drawing on a few of Halliday’s examples:

We say

(Simple present)

(Present in the present)

She likes the gift

(not: She is liking the gift)

Do you know the city?

(not: Are you knowing the city?)

I see the stars

(not: I am seeing the stars)

(Halliday, p.116)

In contrast, in material clauses, the unmarked present is the “present in the present.”

Again we draw on Halliday’s examples:

We say

(Present in the present)

(Simple present)

I’m going home

(not: I go home)

Are you making the tea?

(not: Do you make the tea?)

They’re building a house

(not: They build a house)

(Halliday, p.116)

While these are only two of the five distinctions that Halliday elaborates between mental and material processes, our objective is not to fully convey the rationale for the typology, only to illustrate the nature of the grammatical grounding of the distinction. Therefore,

⁴ A clause is unmarked when it has a “typical” patterning of words. For example, the clause “I hate this painting” is unmarked, but the clause “This painting I hate” is marked in so far as the normal ordering of words is altered to give special emphasis to *this painting*.

rather than complete an exhaustive review of the grammatical distinctions, we will move on to discuss relational processes, the third of the main categories of processes.

Relational processes are those in which a “being” relationship is established between two separate entities. For example, the clause “The spark plug is part of the engine” denotes a relational process. There are three main types of relational processes that generally take the form of either “x is y,” “x is at y,” “x has y.” Each of these relational processes in turn has two distinct modes; either “y is an attribute of x” or “y is the identity of x.”

In addition to identifying material, mental, and relational processes as the three main categories of experience, Halliday specifies three hybrid processes at the borders of the main categories: behavioral processes, verbal processes, and existential processes. Behavioral processes, which are at the border of material and mental processes, are the outward representations of inner cognitive and emotional activity – for example, yawning, dreaming, laughing, or staring. Verbal processes are processes that involve saying. The “sayer” may even be an inanimate object, such as in the statement “My watch says that it is time for lunch.” Finally, existential clauses are those processes that represent the existence of something. In such processes, the word “there” does not represent anything, but it serves as a grammatically essential subject. “There is no time” is an example of an existential process. As both a testament to the extent to which Halliday grounds these different processes in the language itself and as a caution about the generalizability of the grammar, it is worth underscoring that these distinctions of process are based on a grammatical analysis of the English language and, therefore, only fully applicable to texts in the English language. Figure 4 presents examples of the process coding that we performed on these particular reviews.

Given these process distinctions, it is now relatively straightforward to assess the extent to which the painting reviews reveal more evidence of value being characterized in terms of emotional and cognitive impact, whereas the car reviews reveal more evidence of value being characterized in terms of what the object does or what the consumer is able to do with the object. We expect that painting reviews will have a greater percentage of clauses characterized as mental processes, whereas car reviews will have a greater percentage of clauses characterized as material processes.

Figure 5 presents the results of the process coding divided according to orientation. For the reasons discussed above, we have focused only on those clauses in which the orientation is to the object or the recipient. However, an examination of both tables in figure 5 reveals considerably more differences in the distribution of processes for the recipient-oriented clauses than for these object-oriented clauses. Indeed, there are practically no differences in distributions of processes for the object-oriented clauses. The greater variance in the recipient-oriented clauses is probably not surprising since the object-oriented clauses almost necessarily have an external referent and as a consequence are not especially likely to be coded as mental clauses or the hybrids that have an internal component.

We, therefore, turn our attention to the recipient-oriented clauses. Here, the differences are more noteworthy. The percentage of material clauses in the car reviews (42%) is more than four times the percentage of material clauses in the painting reviews (10%). The percentage of mental clauses in the painting reviews (61%) is almost double the percentage of mental clauses in the car reviews (35%). A t-test reveals these differences to be statistically significant at the .05 level in the expected direction, though we once again would caution against attaching too much importance to statistical significance given the nature of the sample.

We finally turn to our third analytical focus: the level of generality characterizing the language employed in the reviews. Our expectation is that there will be a greater percentage of words at lower levels of generality in the car reviews since this facilitates comparison across multiple objects. The obvious question is: how do we formalize the generality of words?

We take advantage of the fact that lexicographers have devoted considerable time to mapping words into lexical hierarchies by identifying hypernym and hyponym relations. The term hypernym denotes the fact a given word is a more general sense of another word. For example, *tree* is a hypernym of *maple*. The word hyponym denotes the opposite of hypernym. So, *maple* is a hyponym of *tree*.

The largest database of these lexical relations is *Wordnet*, an electronic dictionary whose compilation has been ongoing under the direction of Professor George Miller at the Cognitive Science Laboratory in Princeton for more than two decades. The Wordnet

database now contains the lexical relations for 146,350 words. Notably, lexical relations are defined not between words but between senses of words that have a common meaning; these senses are labeled “synsets” (a shortened version of “synonym sets”). There are 111,223 synsets in the current database. Since a given word can have multiple senses or meanings, the same word can appear in multiple synsets.⁵ (For more information on the Wordnet database, see Fellbaum 1998.)

While hypernym/hyponym relations are defined for nouns, adjectives, and verbs, we will focus in this paper only on nouns. Figure 6 gives a partial representation of the hypernym/hyponym relations in which the word *picture* is situated in the *Wordnet* database. Due to a considerable number of hyponyms, it was not possible to list all of the words. However, the majority are listed. As one moves up from *picture*, the words are increasing in their generality. So, *picture* is slightly less general than *graphic art*, which is slightly less general than *art*, and *art* is less general than *creation*. As one moves down from the word *picture*, there are a number of more specific manifestations of *picture*: *abstraction*, *daub*, *miniature*, *finger painting*, and so forth. Some of these more specific manifestations of *picture* have hyponyms of their own; so, *fresco* is a hyponym of *mural*.

With data of this sort, it seems reasonable to identify a word’s generality through its level in the lexical hierarchy. Figure 7 represents the lexical location for five words: *artist*, *beauty*, *canvas*, *fan* (as in an enthusiastic supporter), and *result*. The first column depicts the number of levels above each focal word; the second column depicts the number of words above each word. Typically, the number of levels above each word is equivalent to the number of words above each word. However, in some cases a word/synset may be sufficiently general in meaning that it is a hyponym of two words, leading to the discrepancy between words and levels. Across the words in our data, we never found that the number of higher words differed from the number of higher levels by more than two. In contrast, the number of levels below the focal word can often

⁵ The lexical relations identified in the *Wordnet* database include not only hypernym/hyponym relations and synonym and antonym relations; they also include meronym and holonym relations. A meronym relation is a part-whole relation, and a holonym is a whole-part relation. So, a spark plug is a meronym of combustible engine, and a combustible engine is a holonym of spark plug.

differ considerably from the number of words down. As illustrated by the example of *picture* in figure 6, there can be a number of direct hyponyms for a word that are at the same level of the hierarchy.

Among the example words in figure 7, the discrepancy between levels and words is obviously greatest for the word *artist*. This discrepancy is due to the considerable number of subcategories of artist as well as the fact that *Wordnet* includes prominent artists (e.g., Picasso) as their own subcategories.⁶ It is possible to think about the number of words relative to the number of levels as some measure of the conceptual elaboration in a particular linguistic domain. So, even though both *artist* and *result* are similar in the number of hierarchical levels beneath the word, there is clearly more conceptual elaboration of *artist* than *result*.

There are a very limited number of words at the top of all the hypernym/hyponym hierarchies. In fact, the word “entity”, which is at the top of the tree in figure 6, is one of only nine synsets that appear at the top of the noun hierarchies. The others are:

- physiological feature
- abstraction
- state
- event
- act, human activity, human action
- group, grouping
- possession
- phenomenon

Because of this clear center-periphery structure underlying the hypernym-hyponym relations, we believe that the best measure of the generality of a word is the number of levels above the focal word in the lexical hierarchy. Especially since the hierarchies vary considerably in their length (from 2 to 16 in our sample), the number of levels beneath the focal word is a comparatively poor indicator of the absolute level of

⁶ One might question whether it makes sense to include actual individuals as distinct synsets in the database. Given our analytical interest, we actually find the inclusion of individuals to be an attractive feature of the database since reference to actual individuals may be a key aspect of an evaluation.

generality of that word. For instance, there will be considerably difference in generality between a word is two levels from the bottom of a hierarchy of length 12 and one that is two levels from the bottom of a hierarchy of length 4.

That being said, there is relevant information in whether a chosen word is at the lowest level in its hierarchy. If a word is at the bottom level (i.e., levels down equals 0), then the reviewer has chosen a word for which there is no more specific or fine-grained alternative. Accordingly, in addition to relying on the number of levels above the focal word as the best *absolute* indicator of the level of generality of a particular word, we will also construct a dichotomous indicator of whether the focal word is at the lowest level in its particular tree as an additional indicator of its generality.⁷

With these measures, we can now compare reviews in terms of the level of generality of the language that they employ. We first use the same Machine Syntax software referenced above to extract the main words in sentences. That is, we focus on the main clauses in sentences rather than the subordinate clauses. Since our focus is on nouns, we then create a list of all of the nouns in the main clauses in the reviews.

For each word, we then extract information from the Wordnet database to determine its position in the lexical hierarchy. The major practical difficulty in doing so is that one needs to select the correct sense for a word. For example, the word fan obviously has multiple senses. Each of these senses can have a different level in its lexical tree. However, through a detailed reading of the reviews and the definitions associated with the different senses of a word in Wordnet, it is usually possible to identify the correct sense.

Across the car reviews, the mean number of levels above the focal word is 5.49; across the painting reviews, the mean number of levels above the painting reviews is

⁷ One might reasonably ask why we do not try to capture more fine-grained information on levels down by counting the total number of levels down, rather than dichotomizing this particular measure. In examinations of different trees, we observed that as one moves down levels in the tree, the meanings for words at some of the levels would not be appropriate alternatives to the chosen word. For example, in figure 6, if a picture is a miniature, then the additional level beneath either mural, oil-painting, or portrait would not necessarily be available to the reviewer. So, whereas there is invariably at least one word below a focal word that could serve as a more specific substitute, one cannot infer that more levels implies a larger number of more specific substitutes for the focal word. As a result, the dichotomization seemed appropriate.

5.13. A t-test reveals that the difference is statistically significant at the .1 level. Thus, as anticipated the nouns in the painting review are at a higher level of generality than the nouns in the car review. Also, as anticipated the nouns in the car review are more likely to be at the lowest rung of their lexical hierarchy. 53% of the nouns employed in the car reviews are at the lowest level of the lexical hierarchy; 45% of the nouns employed in the painting reviews are at the lowest level of the lexical hierarchy. Again, the difference is also statistically significant at the .1 level. Accordingly, there is evidence that the vernacular of the car reviews is at a lower level of generality than the vernacular of the painting reviews.

V. Conclusion

We began this paper by articulating a difference between the hedonic and transcendent conceptions of value. We posited that there should be three linguistic earmarks by which we could distinguish these conceptions of value. We then sought some validation for the conceptual distinctions as well as the approach of identifying linguistic earmarks by examining the data from reviews of cars and reviews of paintings. In undertaking the empirical examination, we drew on the work of M.A.K. Halliday to identify clauses as fundamental units of meaning and to specify process types that could be mapped onto theoretical distinctions between the two conceptions of value.

While we have been careful to qualify the conclusions that can be drawn on the basis of such a small number of reviews, the results suggest that there is benefit to collecting additional data along the lines of the data collected here. As noted above, it is not only necessary to look at differences across these two exchange domains. It will also be valuable to look at alternative exchange domains as well as differences within exchange domains – both cross-sectional differences as well as differences that unfold over time. Though we drew on reviews for the purpose of the analyses in this paper, the method is clearly applicable to the quality claims of producers as well as the evaluations of consumers. Subsequent analyses will therefore focus on systematic differences that can be discerned from these alternative sources.

In conducting these additional analyses, there will be additional linguistic earmarks on which we can focus. For example, we argued that the transcendent conception of value is more holistic than the hedonic conception of value. The holistic nature of a value conception is likely to be reflected in an analysis of meronym/metonym relations. That is, to what extent is the evaluation grounded in an analysis of the whole versus a focus on parts of a whole. We also argued that the hedonic conception of value should lend itself to greater institutionalization of categories – something that will be reflected in greater repetition of nouns across reviews. In short, we believe that there is considerable value in looking to language as a guide to analyzing conceptions of value.

Once we feel confident in our measurement of these conceptions, we then will be able to systematically explore how these conceptions of value impact on various market outcomes. At a broad level, we believe that these different cognitive orientations could be central to the segmenting and blending processes (Hannan and Freeman 1989) that are responsible for niche boundaries. The prevalence of a transcendent conception of value will imply greater segmentation, whereas the prevalence of a hedonic conception will imply more blending. At a more fine-grained level, these different orientations could help contribute to our understanding of the persistence of relations. As noted above, while the dichotomy of hedonic and transcendent is analytically distinguishable from the distinction between arms-length transactions and relational contracts, it is possible that the cognitive orientation of the partners to an exchange could impact on the longevity of that exchange and on whether the parties engage in “broad” or “deep” search for alternatives when the terms of trade are no longer satisfactory for at least one of the parties.

We are especially interested in how these conceptions relate to evolutionary dynamics within an exchange domain. It seems natural to assume that the encroachment of the market into so many spheres of social life implies that transcendent conceptions inevitably give way to hedonic conceptions. However, we began by referencing White and White’s (1993) analysis of the rise of the impressionism, where a transcendent conception replaced a hedonic conception. Moreover, in Carroll’s (1985) resource partitioning model, specialists – with identities that are clearly more idiosyncratic than their generalist counterparts – only arise once a war of attrition has occurred among the

generalists. Since specialist organizations seem more likely to induce a transcendent orientation than their generalist counterparts (see Carroll and Swaminathan 2000), it is far from clear that the transcendent conception of value inevitably gives way to the hedonic orientation. Yet, regardless of how these cognitive orientations interweave with market dynamics, this brief discussion of possible extensions should hopefully highlight that there is much potential for application of this conceptual distinction.

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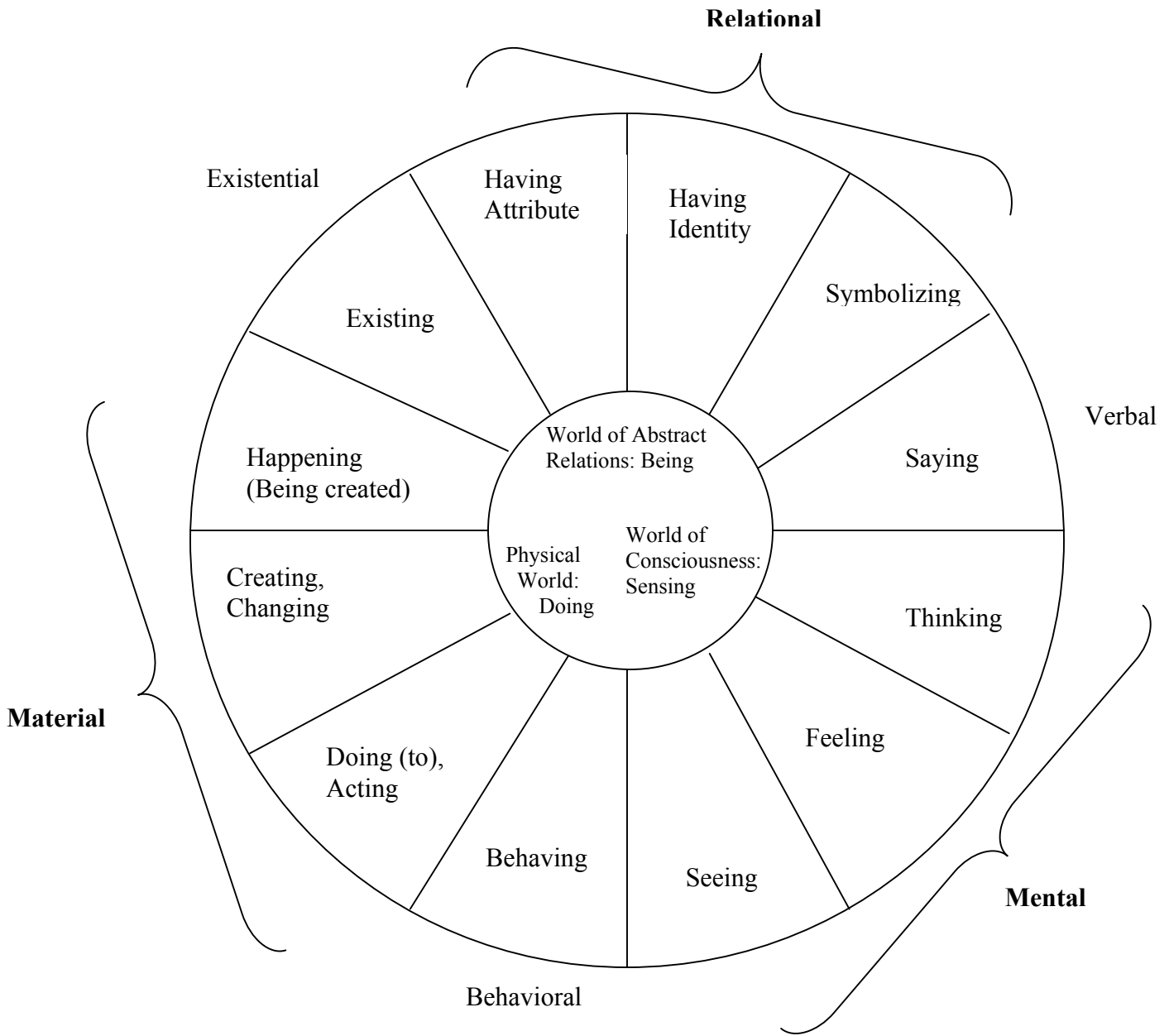
Figure 1: Examples of Orientation Coding

Orientation	Sample clauses
Producer	<p>“Audi also offers a sport package with 30-percent stiffer shocks, thicker anti-roll bars, and more aggressive tires” (2003 Audi A4 Cabriolet)</p> <p>“Southall is a particularly interesting figure in this context. His roots lay deep in Pre-Raphaelitism. He cultivated an anachronistic style owing much to early Italian painting.” (Southall, The Nut-Brown Maid, Christie’s)</p> <p>“Nicholson used colours in a variety of combinations which were never pure like Mondrian’s but always complex and somewhat surprising.” (Nicholson, Composition, Christie’s)</p>
Object	<p>“The aerial views painted by Carol Rhodes verge on abstraction.” (Rhodes, Artnet)</p> <p>“Exhibited at the New Gallery in 1904 and at many venues since, the picture illustrates an old English ballad which made its first printed appearance in Bishop Percy’s Reliques (1765).” (Southall, The Nut-Brown Maid, Christie’s)</p>
Recipient	<p>“During a day of preview driving...we were thoroughly impressed with the way the CL dealt with abrupt transitions, decreasing radius turns...” (2003 Acura)</p> <p>“We are discomfited in a way Frederick Church’s fans would not have been.” (Cvijanovic, Artnet)</p>
Other	<p>“On October 17, the gallery will open an exhibition of new work by the Los Angeles-based artist Toba Khedoori.” (Khedoori, Zwirner Gallery)</p> <p>“A young man decides to test his girlfriend’s devotion by telling her that he has been outlawed and must leave her to live alone in the forest.” (Southall, The Nut-Brown Maid, Christie’s)</p>

Figure 2: Orientation Codes for Cars and Paintings

ORIENTATION	CARS	PAINTING
Producer	51(13%)	68 (23%)
Object	222(58%)	130 (44%)
Receiver	92(24%)	51 (17%)
Other	19(5%)	45 (15%)

Figure 3: Halliday's grammar of experience: types of process in English



Source: Halliday (1994)

Figure 4: Examples of Process Coding

Process type	Sample clauses
Material	<p>“Turn off the traction control, drop the clutch at 4500 rpm, and you rocket to 60 mph in 5.1 seconds.” (BMW M3 Convertible)</p> <p>“A Scottish artist...Rhodes chooses vistas where nature and human enterprise contend” (Rhodes, Artnet)</p>
Mental	<p>“On California roads, however, we rarely noticed any sheetmetal jitters.” (BMW M3 Convertible)</p> <p>“In all of Rhodes’ work, one senses a specific time of day.” (Rhodes, Artnet)</p>
Relational	<p>“The shift throws are short, the gear ratios close, and if it isn’t quite NSX-precise, it’s at least as good as anything in this price class.” (2003 Acura)</p> <p>“The images may be generic but the light isn’t” (Rhodes, Artnet)</p>

Figure 4: Examples of Process Coding (Continued)

Process type	Sample clauses
Behavioral	<p>“It’s a sports car, and it encourages you to drive it like one.” (BMW M3 Convertible)</p> <p>“The longer you look at Disco Bay, the more the virtuosity of Cvijanovic’s color starts to sink in.” (Cvijanovic, Artnet)</p>
Verbal	<p>“Chevy’s engineers pointed out that they have tried somewhat original suspension tuning...” (2000 Chevrolet Impala)</p> <p>“A critic has called Khedouri’s work ‘veiled labyrinths, just visible enough to show that they are sealed, locked down.’” (Khedoori, Zwirner Gallery)</p>
Existential	<p>“If you want a convertible that’s fast...this M3 is the best there is.” (BMW M3 Convertible)</p>

Figure 5: Processes of Clauses in Reviews

OBJECT ORIENTATION

PROCESS	CARS	PAINTINGS
Material	83(37%)	46(35%)
Mental	3(1%)	3(2%)
Relational	131(59%)	81(62%)
Behavioral	3(1%)	0(0%)
Existential	2(1%)	0(0%)
Verbal	0(0%)	0(0%)

RECIPIENT ORIENTATION

PROCESS	CARS	PAINTINGS
Material	39(42%)	5(10%)
Mental	32(35%)	31(61%)
Relational	10(11%)	4(8%)
Behavioral	5(5%)	3(6%)
Existential	1(1%)	0(0%)
Verbal	5(5%)	8(16%)

Figure 6: Hypernym/Hyponym relations for the word picture (a partial representation)

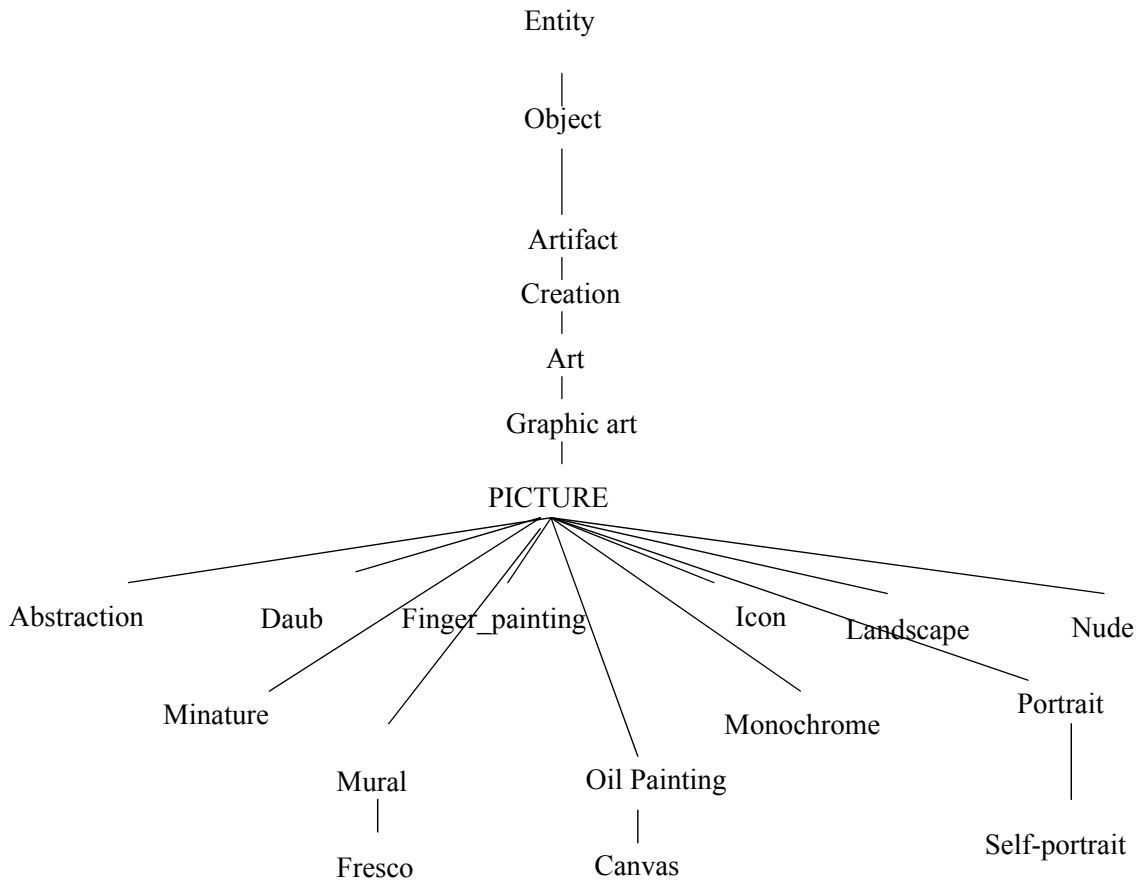


Figure 7: Lexical Hierarchies for Sample Words

	Levels Up	Words Up	Levels Down	Words Down
Artist	6	8	4	442
Beauty	4	4	3	19
Canvas	9	11	0	0
Fan	6	6	1	4
Result	1	1	4	30