Categorical contrast and audience appeal: niche width and critical success in winemaking

Giacomo Negro*, Michael T. Hannan** and Hayagreeva Rao[†]

Previous studies show that producers that span category boundaries exhibit lower fit to category schemas, accumulate less expertise, and elicit negative reactions from both critics and consumers. We propose that the negative reaction to category spanning also depends on another mechanism: widespread category spanning lowers categorical contrast—the sharpness of a category's boundaries. Lowered contrast blurs boundaries among categories due to the impairment of the comparison processes underlying evaluations and the growing disagreement about the meaning of the category. These processes lower the appeal of all products in a category and make it problematic for any offer to receive widespread acclaim. By making boundaries less salient, reduced contrast also lowers the advantages of category specialism. These propositions receive support in an analysis of style categories and ratings of Barolos and Barbarescos, elite Italian wines.

1. Introduction

Product and producer categories structure the understandings of markets—they allow producers to identify rivals and critics, and consumers to compare offerings. These powerful effects also constrain producers and make it difficult for them to span categories. Nonetheless, producers often attempt to cross and straddle category boundaries by claiming or demonstrating affiliation with more than one category.

*Giacomo Negro, Goizueta Business School, Emory University, 1300 Clifton Road NE, Atlanta, GA 30322, USA. e-mail: giacomo_negro@bus.emory.edu

**Michael T. Hannan, Graduate School of Business, Stanford University, Stanford, CA 94305, USA. e-mail: hannan@stanford.edu

[†]Hayagreeva Rao, Graduate School of Business, Stanford University, Stanford, CA 94305, USA. e-mail: hrao@gsb.stanford.edu

This article investigates the implications of straddling for those who straddle and for the categories in which they operate.

Category straddling generally lowers the appeal of offerings in the categories involved for two broad reasons. First, straddling confuses audiences. Producers who seek to occupy multiple categories fail to fit neatly to the audience's expectations in any one of them (Hsu, 2006). Second, operating in multiple categories impedes skill acquisition. Producers who try to operate in multiple categories develop less expertise than category specialists, which makes their offerings less well fit to category schemas and therefore less attractive than those of focused producers (Hsu *et al.*, 2009).

Prior research concentrates on the first issue: the *partiality of category memberships* (atypicality) that results from straddling categories (Zuckerman, 1999; Hsu, 2006; Ruef and Patterson, 2009; Hsu, *et al.* 2009). Less attention has been paid to the effect of category spanning on *expertise or capability* (Hsu *et al.*, 2009). Affiliating with multiple categories can be viewed as an instance of having a broad niche in a space defined by a collection of categories. Viewed in this light, the study of straddling provides a new foundation for the argument for specialist advantage by connecting the issue to niche theory.

We go beyond previous work by emphasizing that category boundaries are responsive to category spanning. Prior research argues that widespread straddling can lower the differentiation of categories and thereby diminish their cultural potency (DiMaggio, 1987; Zerubavel, 1991). However, two key questions remain unanswered: What are the mechanisms by which widespread straddling lowers appeal? When does it pay to be full-fledged member of a category? These considerations constitute the motivation for our article. Our approach to answering these questions employs the notion of the contrast of a category. As we explain below, contrast measures the average typicality of the objects that bear a category label. The presence of atypical members lowers contrast, the degree to which the category stands out from its background.

We argue that widespread straddling lowers category contrast, which in turn reduces the appeal of offerings in the category. First, when contrast is low, many bearers of a category label are by definition seen as marginal members of the category; and this complicates the task of comparing and assessing offerings in a category. In such cases, the distinctiveness of a category decreases. This situation causes the audience to experience indifference or even aversion. Second, lowered contrast undermines agreement among audience members about the meaning of the category because they will have trouble with the atypical members. When audience members agree only partially about the meaning of a category, it is unlikely that any given offering will appeal broadly to an audience.

We suggest that contrast is proportional to the average width of producers' niches in a space of fuzzy categories. A producer's niche in category space is a vector of typicalities (grades of membership) in the set of relevant categories. Having a broad niche means having feature values that fit (partially) to several categories or claiming membership in several categories. We predict that the appeal of all offerings in a

category declines as the average width of categorical niches rises, as multiple-category memberships proliferate.

We also follow the main line of research on category memberships in predicting that audiences generally prefer the offerings of category specialists. The specialist advantage reflects considerations of (i) fit to category codes and (ii) specialized learning. However, we also argue that the gains to categorical specialization decline as category contrasts decline (the average width of categorical niches increases). In short, being a full-fledged member of a category and an expert practitioner of a category's work do not convey advantages when the category becomes so fuzzy that it loses contrast with the rest of the social field.

We test these arguments in the context of the making of Barolo and Barbaresco wines. Winemakers can make these wines in different styles—traditional (as signaled by aging wine in large Slavonian casks), international (aging in smaller French barriques), or mixed (relying on both types of aging methods). Some vintners specialize in one style and others produce wines in more than one style. We use critical evaluations of these wines from two yearly Italian wine guides to assess the effect of a winery's generalism and of the spread of generalism over wineries on the appeal of the wines to professional critics.

In analyzing appeal to critics, we follow most of the previous research in conceptualizing the market as mediated (Hirsch, 1972), with critics serving as intermediaries who interpret and evaluate offerings for consumers and, thereby, influence and predict the reactions of non-expert audiences. Such mediated markets are easier to study empirically because available critical reviews cover broad ranges of offerings.

The contemporary wine world is mediated. A pervasive concern among wine journalists, producers, and activist consumers is that critics (especially Robert Parker and Wine Spectator but also the Italian critics that we consider) have the power to shape producer choices to their own tastes. The power of the critics (including the Italy-based critics whose ratings we study) is such that favorable ratings do improve the economic returns (higher prices or greater sales volume) for producers (Corsi and Ashenfelter, 2001; Hadj Ali, et al. 2008). Our previous research finds very strong effects of critical ratings on retail wine prices. Barolo and Barbaresco wines with higher ratings command substantially higher prices: a four-star wine sells for $32 more on average than a one-star wine (Negro et al., 2007). And, although critics might use more complex schemas than do most consumers, the one study that examined this in the context of straddling shows that the pattern of effects for the mass audience is strikingly similar to those for the critics (Hsu et al., 2009).

2. Categories and contrast

Categories are semantic objects. For purposes of sociological analysis, they can usefully be considered to be social agreements about the meanings of labels assigned to

sets of objects. Meanings, in turn, can be represented as schemas that tell which feature values are consistent with membership in the category and which are not. For example, Rao *et al.* (2003) outline the feature values (pertaining to ingredients, modes of preparation, organization of the menu, mode of service, and organizational role of the chef) that figure in the schemas for the "classical" and "nouvelle" categories in French gastronomy. Other familiar examples of schemas include the codes-specifying genres in beer brewing (Carroll and Swaminathan, 2000), films (Hsu, 2006), graphical arts (Fine, 2004), literature (Griswold, 1987), country and jazz music (Peterson, 1997; Phillips and Owens, 2004) as well as the codes that mark professions (Abbott, 1988). In each case, the prevailing schemas tell what features are relevant and what values of those features fit the category label. In other words, an audience member's schema for a category label characterizes the meaning attached to the label.

Even when audience members agree about meaning (what schemas apply), they often recognize that producers/products fit category codes only partially (fit some elements of the schema but not others). Hannan, *et al.* (2007) emphasize the issue of partiality; and they define categories as *fuzzy* semantic objects with the property that a producer's typicality or grade of membership (GoM) in a category reflects the degree to which its feature values fit audience members' schemas. To return to the cuisine example, a chef–restaurant pair that exhibits all of the schema-conforming feature values for one style (and not the other—because of the categorical opposition) has GoM of one in that style and GoM of zero in the other. If some feature values fit one style but others do not, then the chef/restaurant has only a moderate GoM in that style.

Social categories emerge when an audience reaches agreement about what a label means, and a category persists so long as the level of such intensional consensus remains high, according to the Hannan *et al.* (2007) formulation. Actions by producers (category members) affect the emergence and persistence of consensus. Consensus about the application and meaning of a label is more likely when the objects being labeled and classified are highly similar. Likewise, increasing diversity (and violations of category codes) after categorization threatens the durability of consensus.

2.1 Category contrast and appeal

A category has sharp boundaries if audience members seldom assign low or moderate GoM in the category to bearers of the category label; and boundaries become weaker and more blurred if such partial assignments of GoM become more common. The concept of category *contrast* captures this idea, as we noted above. Contrast is defined as the average GoM in the category for those with a positive GoM. Thus high contrast means that audience members generally perceive producers or products to be

either nearly full in or fully outside the category. In simpler terms, *high contrast means low fuzziness.*

In the case of what Hannan *et al.* (2007) call a positively valued category, the expected appeal of a producer's offering to a typical audience member increases with the degree of which the producer (and the offering) conform to that member's schema for the category.

Lowered contrast likely reduces the appeal of all offerings in a category in two ways. One involves the relationships among categories. Fuzziness implies a loss of distinctiveness of a category relative to the others, making unclear what are the appropriate comparisons for the members of a category. The audience reacts negatively to such a decline in clarity. Simmel (1978 [1907]: 256) described this state as promoting the blasé attitude, which means experiencing "all things as being of an equally dull and grey hue, as not worth getting excited about." The essence of blasé attitude is an indifference towards the distinction between things (Simmel 1971 [1903]: 330).

With increasing fuzziness, clusters of objects become less salient and elicit lower attention. Comparisons become more difficult; audience members have trouble using distinct descriptors, and develop attitudes of reserve, strangeness, even aversion or repulsion. Negative evaluations are more common, and audience members claim previous judgments were too generous or neglected important differences (Griswold, 1987).

Another way in which the loss of contrast diminished an audience's enthusiasm for a category involves an intra-category effect: the loss of agreement about the meaning of the category. When contrast falls, producers to which audience members apply the same label tend to share fewer schema-relevant feature values, a situation that sparks disagreement about the meaning of the label and about which producers belong to the category. The loss of distinctiveness "hollows out the core of things" (Simmel 1978 [1907]: 256). Blurring changes the character of and discomposes each category, 'not a redrawing of the map, but an alteration of the principles of mapping' (Geertz, 1983:27). If key audiences agree about what a category means then products/producers can gain broad acclaim for excellence. However, low consensus about meaning makes it unlikely than any offering receives such acclaim.

Lack of consensus can also lower the likelihood that an offering will be widely judged to be inferior and, therefore, lower the variance of evaluations. However, in many cases of interest (including ours) audience members make finer and more careful distinctions in the upper range of offerings (Lang, 1958). Then the disagreement about a category (as reflected in low contrast) lowers evaluations overall. In this sense, the social value attached to a category declines when its boundaries become blurred.

Finally, the penalty for spanning should decline as a category loses contrast. Reduced contrast implies that audience members find it more difficult to assess the fits of patterns of feature values to their schemas. The reduced prominence of

prototypical patterns reduces the consistency of evaluations (McArthur and Post, 1977). Blurred boundaries also make transgressions less salient and harder to identify (DiMaggio, 1987; Geertz, 1983). In particular, category spanning is no longer an identity-discrepant cue for the audience; so it does not bring such strong penalties (Rao *et al.*, 2005).

3. Niches in a space of fuzzy categories

The concept of niche is delineated by a fitness function that tells how an entity's fitness (success) varies over positions in some space (Hannan and Freeman, 1977). Niche theory's signature principle of allocation holds that the area under a fitness function is fixed, at least in the short run. This principle implies that broadening a niche comes at the expense of appeal (or success) at positions within the niche (Freeman and Hannan, 1983; Popielarz and Neal, 2007).

Hsu (2006) and Hsu *et al.* (2009) frame the issue of category straddling as an instance of the broadening of a niche. But they change the specification of the space from one defined over resources or social characteristics (Blau space) to a *space of categories*. We build on their formulation.

The standard definition treats niches as crisp sets in a social space: each position in the space lies either (fully) in a producer's niche or (fully) out of it (McPherson, 1983). In fuzzy-set representation of Hannan *et al.* (2007), memberships can take values on the [0,1] interval: niches can include social positions to varying degrees. This representation provides a natural way to introduce variations in fitness within the niche and allows a more nuanced examination of boundary processes. This notion carries over naturally to consideration of a space of categories. A producer's category niche is a vector of GoMs in categories.

Hannan *et al.* (2007) define a producer's niche over positions in Blau space in terms of the expected appeal of its offering to the prototypical audience members at the positions. Appeal, in turn, depends upon *intrinsic appeal* (fit to the aesthetics of the position) and *engagement* at the position (learning about local tastes, designing offerings to fit these tastes, and presenting them in a way that the audience deems appropriate) In the case of category space, appeal as a category member depends upon (i) fit to schemas for categories and (ii) intensity of engagement as a category member.

The theory of fuzzy niches implements the principle of allocation for both inputs: intrinsic appeal and engagement. It posits that the sums (over social positions) of the expected levels of intrinsic appeal and of engagement are fixed at the same level for the producers in a population. For the case of a space of categories, the parallel restrictions apply to the sums of (i) fits to category schema and (ii) intensity of engagements over categories.

Previous research treats the space in which niches are specified as metric (meaning that distances between positions are well defined). Surprisingly, most elements of the theory persist when the metric assumption is dropped (Hannan *et al.*, 2007: Ch. 8) as is appropriate in analyzing niches in category space. In this more general case, niche width can be measured with an index of diversity, such as Simpson's (1949) index.

3.1 Niche width and perceived contrast

If the average width of producers' category-membership niches and category-engagement niches are zero, then a category has maximal contrast. As average niche width increases (on either fit to category schemas or engagement), categorical contrast declines. In other words, average categorical niche width is inversely proportional to the average contrasts of the categories.

We assume that the producers' actions (especially those that affect category-niche width) shape audience members' perceptions of the crispness/fuzziness of a set of categories. That is, we assume that decreases in contrast, as measured by increases in average category-niche width, causes audience members to perceive that category boundaries are blurring. With categories losing distinction, the specialist advantage from category learning and fit to category schemas decreases for the reasons discussed in the previous section.

3.2 Niche width and skill accumulation

A principle of allocation likely applies to learning from experience. A focused producer can learn subtle lessons from experience more rapidly than one who spreads attention over multiple activities. Indeed this is Adam Smith's key insight about the advantages of specialization (a division of labor). If we compare specialist and generalist producers who have been active in a domain for the same duration, the specialist will normally have a higher level of expertise in its style than the generalist has in any one style. Such expertise differences can translate into differences in efficiency, speed of output (as in the case of pin manufacture discussed by Smith), or better match to audience expectations. In markets for luxury goods, such as the wines we study, matching schema-based expectations for styles case is most relevant (especially for small-scale producers). In such cases, differences in expertise generate differences in how well styles are executed and thus differing appeal to the audience.

Given that attention and cognitive capacity are limited, a producer presumably learns less per period about any style when engaging multiple categories than when focusing on only one. This reasoning suggests that measures of experience ought to be made for styles and adjusted for the history of a producer's niche width such that the increments to experience in categories in each period are set equal to the producer's GoM in the category in that period. We refer to this construct as *fuzzy experience*.

We also suggest that having a broad niche makes it more difficult to put into practice the lessons from experience. If so, then the difference in capability to deliver on styles between focused and generalist producers grows wider with experience.

4. The empirical setting: styles in making Barolo and Barbaresco wines

We analyze producers of Barolo and Barbaresco wines, generally regarded as among the world's greatest wines. Our attention was drawn to this setting because it became a hotbed of contention over authenticity in styles and methods during the 1990s.

The producers of these wines are mainly family businesses and are very small in scale by world standards. Only 37 of the firms we study produced more than 100,000 bottles per vintage. Only five (including three producer cooperatives) produce more than one million bottles (Gambero Rosso, 2008). Some of the most renowned producers are much smaller: Bartolo Mascarello, Giuseppe Rinaldi, and Roberto Voerzio produce roughly 30,000 bottles per year; Elio Altare and Giacomo Conterno produce roughly 55,000. By contrast, Settasoli and Monin in the Veneto region each produce more than 20 million bottles. Even this is tiny by world standards. The brands owned by Constellation Brands produce roughly 80 million *cases* per year; and Gallo produces roughly 65 million cases.

Production of Barolos and Barbarescos is controlled by a legal code, a *Disciplinare di Produzione*, which specifies properties that must be satisfied for a wine to bear these labels. These codes require the exclusive use of Nebbiolo grapes grown in a delimited region of the Langhe (in Italy's northwest Piedmont), aging in wood for specified periods, and a variety of other conditions. However, they allow discretion on other key choices such as duration of maceration, whether fermentation relies on the naturally occurring yeasts of the vineyard and cellar or on laboratory products, and whether fermentation temperature is controlled. It also leaves open the kind of barrels used for aging. Choices on these dimensions affect color, aroma, and taste. Although these options became subjects of some contention when producers began to vary these techniques to produce initially a French style of Barolo/Barbaresco and later a more "international" or "New World" style, the type of aging vessel became the main focus. The barrels/casks have a noticeable presence in the winery over the whole production cycle and are visible to visitors (such visits are an important marketing tool for wineries).

Traditionally very large casks (*botti grandi*) made from Slovenian oak or chestnut were used to age these wines. This practice was challenged by modernists who began aging wine (partially) in *barriques,* small barrels made from aromatic French oak. Angelo Gaja, generally regarded as the initiator of the use of *barriques* for these wines, sought to compete with the great wines of Bordeaux. Other early users of *barriques* for Barolo production, notably Elio Altare, emulated the great wines of Burgundy

(and sought to command similar prices). We find it revealing that the participants in this Italian wine world use the French name for such a barrel, especially in light of the fact that the Italian language has a word for it: *fusto*.

Gianni Fabrizio, a senior editor of the Slow Food organization's influential *Gambero Rosso* wine guide (one of our data sources) summarized the technical advantages of *barriques*:

> In modern winemaking *barriques* are important because they allow two things that have been crucial for the great success of Barolo. First of all, *barrique*s overcome a big problem of Nebbiolo: the light color of the wine. *Barriques* fix the antocyans, so the color is deeper. Second, *barriques* induce higher exchange of oxygen, which makes tannins form longer chemical chains, resulting in softer tannins. According to the modernists, the biggest problems of Barolo were the lack of color and the presence of too much tannin.

The *barrique* became a symbol of modernity. The French-style Barolos and Barbarescos aged (partly) in *barrique* found favor with the critics and consumers in the 1990s; and many vintners followed the lead of Gaja and Altare. This stylistic insurgency sparked a traditionalist countermobilization around regional typicality that sought to preserve traditional practice as the essence of authenticity (Negro *et al*. 2008). It championed wines with tastes unique to Barolo/Barbaresco rather than those that tasted of French styles or the ascendant "international" style of winemaking.

Although traditionalists regard *any* use of *barrique* as signaling a "modern" or "international" style (Negro *et al.*, 2007), some critics and wine journalists do not accept that view. Indeed, a considerable diversity in methods of production and associated styles persists despite the strong categorical opposition between tradition and modernity; and there might be more than one modern style. Early modernists, such as Gaja, Altare, and Enrico Scavino, used *barriques* in combination with *botti* to create a softer, more approachable style with a moderate influence of oak on taste. A later branch of modernism opted for a more extreme "international" style with more highly extracted, darker, and more obviously oaked wine. Exponents of this style, such as Rocche dei Manzoni, La Spinetta, and Conterno-Fantino, use only *barriques*.

Producers, critics, and enthusiasts debate whether combining aging methods constitutes a middle-ground style between the "traditional" pole and a fully "international" style. The predominant view acknowledges the existence of a distinct "middle" style. In a recent newsletter Italian wine expert Sergio Esposito (2008) argues:

> It seems like a simple, straightforward question—traditional or modern?
> But in Piemonte, there are no easy answers where style is concerned.

> While there used to be a very fine line between the two styles, that the narrow middle ground has virtually exploded, rendering classification almost impossible. There's no better testament to this amorphous ground, perhaps, than the present situation of Bruno Giacosa, who is customarily referred to as a traditionalist. Now, given his reduced maceration periods and use of stainless steel, you can almost position him with the likes of Luciano Sandrone and Domenico Clerico. Well, you could, if only these so-called modernists and their fellow "Barolo Boys" from the tempestuous '80s hadn't started revisiting the past *en masse*, lengthening maceration periods and dusting off their Slavonian oak casks.

Other industry insiders provide similar views. We collected a number of other comments that similarly defended the distinctiveness of the middle ground style. For instance one said: "We like the taste of our wines to express variety. We define ourselves as alternative, we don't believe there are only these two categories, but there is a range of possibilities."

If audiences recognize them, then three styles must be considered, each corresponding to a different production method. We use a three-style representation in our analysis.

4.1 Style Niches

A winery's portfolio might consists of several labeled Barolos and/or Barbarescos and, therefore, potentially of a range of styles. A producer can focus narrowly by producing wines only in one style. Above we gave well-known examples of the pure types. Other wineries produce portfolios with a mixture of types. For instance, both Poderi Luigi Einaudi and Cascina Ballarin produced one *botti*-aged, one *barrique*-aged, and one *barrique*-and-*botti*-aged wine in some vintages; and Marchesi di Barolo has sometimes produced two labels of each style. We conceptualize these differences by characterizing *style niches*. We employ the notion, developed above, that distinct styles correspond to the three methods of production (aging).

5. Implications of the theory in the empirical context

According to our argument about categorical contrast, style straddling clouds the boundaries among styles. If style specialists predominate, then the perceived distinctions among styles will generally be sharp. Critics and knowledgeable consumers have a reasonable chance of schematizing the differences among styles in such situations. Such was apparently the case when Gaja, Altare, and others first challenged the status quo in Barolo/Barbaresco production by introducing wines aged partly in *barriques* (and making other related changes such as shortening maceration times and
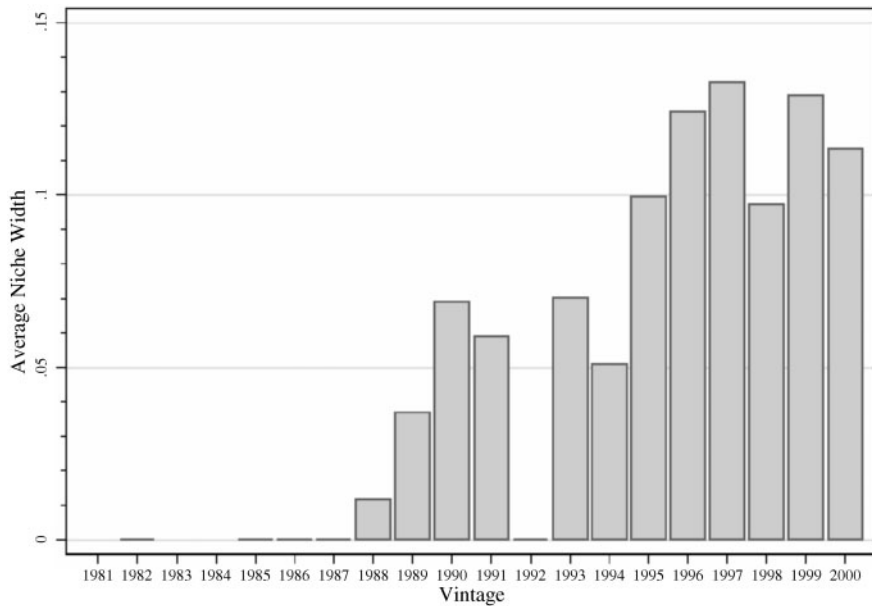
Figure 1 Level of average width of style niches (contrast) over vintages

controlling fermentation temperatures). The critics had little difficulty distinguishing these new products; and they reached agreement about what makes a wine "modern" (soft tannins, fruitiness, high concentration, etc.). During this period, all makers of Barolo and Barbaresco were style specialists and the average style niche width was zero.

Over the study period, average niche width has grown (Figure 1). According to the argument in preceding sections, this trend should have affected critics and enthusiasts in two ways. First, a weakening fit between schemata and practice makes it more difficult to identify wines that clearly stand out from the rest, making them deserving of very high evaluations. Second, the consensus among critics about the standards for judging wines as instances of styles might break down in the face of growing diversity of product attributes. If critical success depends on the agreement among the critics and consensus about meaning weakens, then fewer wines will be collectively stamped as outstanding (especially as compared with other elite Italian wines that these critics evaluate). Both processes should cause the average level of appeal to critics and knowledgeable audience members to decline as average niche width increases. This mechanism should be most discernable in the upper ranges of what the audience views as high quality.

Our interviews suggest that critics and wine journalists share this intuition. An editor of the Gambero Rosso guide said "Everybody is in trouble when it comes to

judging these wines, because they are unquestionably well-done wines, but less representative [of the territory]." The editor of another wine journal commented:

> The result is that there exists a contraposition between traditionalists and innovators; however most of the purists [traditionalists] produce wines in the modern style as well, because the market requires them to. In the end, classic and new [modern] productions coexist even in the historical producing houses, generating a schizophrenic situation.

A co-editor of the Veronelli Guide, Daniel Thomases, remarked:

> It happens that some producers were not too sure about which way to go, what technique to use, so they offer two products here and two products there . . . When that happens, I find it strange. A producer's line of products should reflect a specific zone as well as that producer's philosophy. A winery is not a supermarket.

The claim that a broad niche comes at the expense of appeal in particular categories appears to be sound in this empirical setting. Interviews with critics reveal that they employ schemas for the various styles. Although they often prefer one style (as we find empirically), they report that they generally evaluate wines as instances of a type.

Specializing in a style allows a vintner to become more expert in its production, better able to tune production decisions to fit the prevailing aesthetic schemas for that style. Such improved fit makes offerings more intrinsically appealing than those of style generalists (as long as the producers have similar scale of production or scale does not provide any advantage). In other words, niche theory implies that audience members who favor the traditional style will find the products of focused traditionalists more appealing than wines in the traditional style made by less focused producers and so forth.

This inherent disadvantage of spanning styles becomes manifest when audience members can compare the offerings of specialists and generalists. (If there are no focused producers in the market, then unfocused producers do not suffer disadvantage.) The competitive arena in our empirical context contains unfocused producers as well as focused producers in each style. Hence we predict that the expected actual appeal of a wine decreases with the width of its producer's style niche in this diverse market.

This reasoning holds whether or not the audience member can associate a producer with the product (as in a blind tasting). The consequences of reduced expertise due to generalism in styles inhere in the style-relevant features of the product. This does not, of course, mean that we think that there is an objective standard of excellence independent of the audience member's aesthetics. As is the case in all contexts with socially constructed standards (such as art worlds), the most basic component

of competence as a producer is the ability to produce offerings whose feature values match the expectations of the audiences. In other words, engaging as a member of a style category is not enough to generate appeal; the producer must also produce appropriately.

Nonetheless, audience members often do know who made a product. (As we describe below, for one of our sources, the critic usually knows the producer's identity.) If the evaluators know (or even try to guess) who made a product, a lack of focus might affect construals of a producer's identity. Focus in a style connotes commitment; style diversity does not. Many of the winemakers we interviewed told us that they chose a focused approach because they believe that their wines must reflect their own tastes and identities. A leading traditionalist said: "Winemaking for me is not improvisation—it is the work that my father transferred to me, so it is part of my identity. I don't want to erase my roots, my history..." A focused modernist told us: "We like wines aged in barriques . . . The choice of aging methods depends a lot on the personal tastes of each producer." A focused middle-style vintner also emphasized a personal style: "Well, there are producers who are very traditionalist and others who are very modernist . . . [W]e stay in the middle; we use technology in order to improve the quality. But, at the same time, we respect the tradition."

In contrast, some generalists tell that they employ diverse styles to appeal to different audiences. A leading producer in Barbaresco said:

> The regular Barbaresco and this cru [pointing to a particular label] begin their honing in French barriques to fix the color . . . After six months, the wine is poured in the traditional 25hl Slovenian-oak *botti* in order to continue the aging for at least another year. The other cru has its whole 18 months of aging in the *barriques*. We decided to do that because we wanted to slightly differentiate the final product, and try to give a different sensation with this last one, because the *barrique* gives a different taste.

Another said "We use *botti* and *barriques* and try to get the best out of it. That's why we also have two labels. One American critic defined us as hesitant (*indeciso*). Every journalist wants you to identify yourself, to line up. But what is the sense in that?" Some vintners said that they diversified to meet market demands. For instance, one who produces both a traditional and a modern wine said "I employ *barriques* only because the market demands it. If it were my choice, of course I wouldn't use *barriques*."

For products like these wines, consumers arguably prefer the offerings of more committed producers. If this is so and if audience members perceive a broad style as signaling a lack of commitment, then critics and consumers will find the wines made by focused wineries more appealing. Thus the identity based argument points in the

same direction as the argument based on expertise and knowledge of audience schemata for types.

To summarize, we predict that:

1. Reduced contrast among types (high average categorical niche width) lowers the expected appeal of all wines in a category.
2. Generalism lowers the expected appeal of a producer's wines by (i) reducing fit to category schema and (ii) reducing the value of the accumulation of skill from experience. The negative effect of partiality of membership (due to generalism) on expected appeal weakens as contrast declines.

6. Research design and measurement

6.1 Design

We assess a wine's appeal to an audience by examining the reactions of critics, as we explained at the outset. We analyze evaluations by two influential critical publications: *I Vini di Veronelli* (hereafter Veronelli) and the Gambero Rosso's *Vini d'Italia* (hereafter GR). We analyze their ratings of Barolos and Barbarescos from the vintages 1982–2000. Our unit of analysis is a triplet consisting of a producer, a labeled wine, and a vintage. We analyze the triplets for which the wine was reviewed by both sources for that vintage. (The appendix provides details.)

We also rely on additional material drawn from (i) semi-structured interviews with forty-five experts including winemakers, wine journalists, and enologists in the Piedmont area and elsewhere in Italy during 2005–2007, and (ii) a telephone survey on choices of vinification methods conducted in 2006 with all producers in the dataset.

6.2 Dependent variable

Both guides use ratings to communicate ordered assessments of labeled wines. Veronelli assigns ratings expressed in stars: one star ("good wine"), two stars ("optimal wine"), three stars ("excellent wine"), and "super three stars" (an award of distinction).[1]

GR assigns one glass, two black glasses, two red glasses, and three (red) glasses (where red is a higher ranking than black). According to figures reported in Table 1, the two guides differ somewhat in the distribution of ratings. GR has a smaller fraction in the top rating (5% versus 10% for Veronelli) and more in the lowest

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[1]Veronelli assigns a trifolium symbol to wines reviewed for the first time. This indicates overall good quality of the wine but does not imply any specific rating. We exclude these observations from analysis.

Table 1 Descriptive statistics ($N = 1952$)

	Mean	Std Dev.	Min	Max
Veronelli Guide ratings				
One star	0.092		1	0
Two stars	0.564		1	0
Three stars	0.238		1	0
Super three stars	0.106		1	0
Gambero Rosso Guide ratings				
One glass	0.165		1	0
Two black glasses	0.575		1	0
Two red glasses	0.210		1	0
Three red glasses	0.050		1	0
Niche width	0.139	0.218	0	0.667
Average niche width	0.097	0.034	0	0.132
Niche width × average niche width	0.015	0.025	0	0.086
Producer's number of labels	6.56	3.25	1	19
Tenure	11.3	5.57	0	39
Fuzzy experience	3.74	2.60	0	15
Fuzzy experience × niche width	0.556	1.06	0	4.89
Riserva wine	0.051	0.221	0	1
Cru wine	0.880	0.325	0	1
Botte-aged wine	0.482	0.500	0	1
Barrique-aged wine	0.270	0.444	0	1
Total number of labels of Barolos and Barbarescos	1191.9	353.3	138	1750
Vintage quality	91.8	5.01	74	96
Year (1980 = 0)	15.6	3.83	2	20

category (16% versus 9% for Veronelli). The guides also show only a modest level of agreement: the Spearman rank-order coefficient is roughly 0.40.

6.3 Independent variables

As the previous sections outlined, we associate styles with aging methods and calculate niche width using information about producers' profiles of wines over styles. Suppose that the niche of producer x at time t in a nonmetric space is given by the GoM: $\mu(z,x,t)$, where $z \in Z$ (a set of categories in our analysis). A producer's style niche is a triplet of GoMs: $\{\mu(trad,x,t), \mu(mod,x,t), \mu(middle,x,t)\}$, where $\mu(s,x,t)$ denotes the GoM of the producer x as an exponent of the style s at time t. Lack of focus means a broad niche; and we use the width of a (fuzzy) niche, as defined in equation (1), to represent the idea. Following Hsu *et al.* (2009), we set a producer's

GoM in a style to the proportion of the labels in its portfolio in a vintage in that style. For focused traditional producers such as Bartolo Mascarello the style niche is {1,0,0}. For focused modernists (internationalists) such as La Spinetta it is {0,1,0}. For focused middle-of-the-road producers like Gaja and Enrico Scavino, the style niche is {0,0,1}. At the unfocused extreme (cases such as Einaudi), this niche is {0.33,0.33,0.33}.

Niche width is the unevenness of the distribution of GoM over the space:

$$width \{\mu(z,x,t)\} = 1 - \sum\nolimits_{z \in Z} \mu^2(z,x,t). \tag{1}$$

Of course, the minimum possible value of niche width is zero (meaning complete focus). The maximum possible width with three styles is 2/3, which indicates a complete lack of focus. Our independent variables include the *producer's style-niche width*, the *average niche width* among all producers, and an *interaction of the two*.

We also built on the new niche theory and calculated a measure of *fuzzy experience*. A crisp view on experience in winemaking would suggest a winery's experience with its portfolio of styles in the focal vintage ought to be calculated as the sum of experience for each of its current styles. If a winery produces one style in the focal vintage, then its total experience equals its experience with that style (even if it produced different styles in the past); if it does two styles, then its total experience equals the sum of its experiences in these styles, and so forth. According to our niche-theoretic arguments, however, a vintner learns more about producing a style while specializing in that style than when producing multiple styles, as we noted above. In other words, a principle of allocation applies to learning from experience. We implement this notion by using GoM in styles to calculate experience in styles. Our fuzzy measure of experience sums a winery's GoM in each of its current styles over prior vintages. We also include an interaction of fuzzy experience with producer's style-niche width to account for how skill accumulation can result in decreasing appeal for producers with lower engagement and category fit.

6.4 Control variables

Control variables include the tenure of the winery (the number of years as a maker of Barolo or Barbaresco), the number of labeled Barolos and Barbarescos released by the focal producer in a vintage (because the maximum possible niche width rises with the number of labels produced), and the number of labels produced by all of the wineries in the vintage. We also control for several variables that have been shown in previous research to affect the appeal of these wines (Negro *et al.*, 2008): dummies for whether the wine is a Barbaresco (rather than a Barolo), a reserve (*riserva*), and a *cru* (indicating a particular vineyard). To account for additional time-dependent effects we included a linear time trend (set to zero for 1980, the year in which our

informants suggest systematic use of modern vinification techniques started).[2] We also accounted for the overall quality level of each vintage to account for weather-related fluctuations by using the vintage ratings for Piedmont from Robert Parker's *Wine Advocate*.

7. Results

We treat the evaluations (number of stars/glasses) as ordered, as the sources clearly intend, and we estimate ordered logit specifications. That is we interpret the discrete ratings as cut points on an underlying unobserved metric dimension (appeal). The standard formulation for the ordered logit can be expressed as $A = \mathbf{x}'\beta + \varepsilon$, where A (appeal) is unobserved, $\mathbf{x}$ denotes a vector of covariates, and the disturbance ε has a logistic distribution. The observable ordered categories are related to the unobservable latent variable according to the following rule: $Z = i$ if $\delta_{i-1} < A \leq \delta_i$, where δ_i ($i = 0, \ldots, I$) are cut points and $\delta_0 = -\infty$ and $\delta_I = \infty$.

We use (pseudo) ML estimation with clustering by producer (to adjust for the likely lack of independence of ratings of wines made by the same producer). This clustering (implemented using the vce(cluster) option in Stata 10) fits an intraclass correlation for within-producer observations and calculates robust (sandwich) estimates of standard errors, net of the cluster effects.

As noted above, we collapsed the bottom two rankings for each source because we think that the critics are more sensitive to the issues we investigate when they make distinctions in the upper ranges of appeal. Nonetheless, we have also estimated parallel specifications using all of the available distinctions, and we find the same qualitative patterns of effects, as we discuss below.

The signs of the point estimates of the three terms involving niche width in Table 2 agree with the implications of the theory. The appeal of a wine decreases with the categorical niche width of its producer. Appeal also falls with contrast (the average niche width among producers); and the negative effect of niche width on appeal lessens as contrast (average niche width) increases. Each of these effects is highly significant for both sources of critical evaluations.

These effects are strong in substantive terms. Figure 2 depicts the combined effects with the interaction taken into account (for Veronelli ratings). It shows that both the main effects and the interaction effects are strong over the full ranges of the variables. Note that specialists have a large advantage relative to generalists under high contrast conditions (average niche width close to zero) but lose it at low contrast. Such a loss

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[2]Specifications that allow the differences in ratings of traditional and nontraditional wines to vary over time do not improve model fits significantly.

Table 2 Determinants of the appeal of Barolo and Barbaresco wines to critics (ML estimates of ordered logit regressions)

	Veronelli Ratings		Gambero Rosso Ratings	
	(1)		(2)	
	Coef.	(S.E.)	Coef.	(S.E.)
Niche width	−3.81**	(1.28)	−3.80**	(1.39)
Average niche width	−12.4**	(2.89)	−15.2**	(3.63)
Niche width × average niche width	48.5**	(14.7)	50.9**	(12.2)
Fuzzy experience	0.176**	(0.063)	0.096*	(0.046)
Fuzzy experience × niche width	−0.509*	(0.213)	−0.537**	(0.161)
Producer's number of labels	0.110**	(0.033)	0.004	(0.035)
Tenure	0.073**	(0.023)	0.078**	(0.016)
Riserva wine	0.656*	(0.332)	1.29**	(0.296)
Cru wine	1.56**	(0.414)	1.57**	(0.441)
Botti-aged (versus middle style)	−0.342	(0.241)	−0.575**	(0.203)
Barrique-aged (versus middle style)	0.799**	(0.195)	0.701**	(0.184)
Total number of labels	0.001**	(0.0002)	0.002**	(0.0003)
Vintage quality	−0.033*	(0.015)	0.010	(0.022)
Year (1980 = 0)	0.018	(0.035)	0.90**	(0.034)
Cutpoint 1	1.53	(1.47)	6.61	(1.99)
Cutpoint 2	3.29	(1.45)	8.83	(1.99)
Log-pseudo-likelihood	−1456.0		−1152.7	
Wald χ^2	198.9**		370.5**	
Number of observations	1952		1952	
Number of producers	164		164	

Robust standard errors adjusted for clustering on producers are given in parentheses.

**P<0.01, *P<0.05, †P<0.10 (two-tailed).

of contrast seriously damages the critical ratings of the style specialists. *Full-fledged membership in a category does not convey much advantage when the category boundary blurs,* according to these estimates.

Experience with a style increases ratings. The main effect of fuzzy experience is positive and significant: appeal increases with the amount of relevant experience.[3]

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[3]Model fits improve significantly for the GR data but not Veronelli data if we allow the effect of experience to vary by style. The estimates tell that experience matters more for the traditional style than for the others.
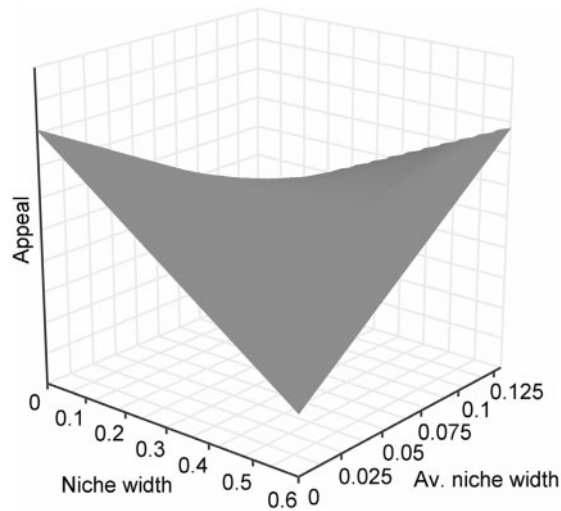
Figure 2   The effects of producer niche width and average niche width on expected appeal (using estimates from Veronelli rankings from Table 2)

These results indicated that there are returns to specialized learning. In unreported analysis we compared the effects of crisp experience, for which we sum relevant years of experience (rather than the GoM), and fuzzy experience. Because we prefer the fuzzy conception on theoretical grounds, we tested whether adding the crisp measures to specifications with the fuzzy measures would improve model fits significantly. This does not happen for either set of rankings.

The effect just discussed is the effect of fuzzy experience on appeal for style specialists (for whom the interaction term equals zero). The interaction of a producer's fuzzy experience with its niche width is negative and significant for both sets of rankings. This means that learning from experience has negligible impact on appeal for style generalists. Taken together, these estimates imply that experience increases appeal at low levels of niche width but this effect diminishes with increasing niche width. The combined effect is zero when niche width equals 0.35 (Veronelli estimates) or 0.18 (GR estimates), and it is negative at higher levels of niche width. Thus category spanning actually lowers the returns from learning from experience— the principle of allocation appears to apply with respect to experience-dependent learning.

The effects of the control variables turn out as expected in most cases (Table 2). The critics give higher ratings to *riservas* and *crus*. They also assign higher ratings, on average, to the modern (*barrique*-aged) style than to the other styles. Moreover, GR devalued traditional-style wines significantly relative to those with the middle style. Ratings have increased on average over time, which agrees with the common observation that practices in both vineyard and cellar have improved over time.

Appeal also rises with the tenure of a producer of Barolo or Barbaresco according to both sets of rankings. Surprisingly ratings were lower in favored vintages for the Veronelli rankings, but not the GR rankings.

7.1 Robustness tests

If spanners have less expertise than non-spanners, then an increase in spanning could lower average performance of category members and lower expected appeal to the audience. Perhaps some vintners find that they cannot compete head-to-head with focused producers and broaden their offerings in an effort to escape strong competition. (Of course, this strategy will not bear fruit in a diverse market.) We analyzed whether this scenario might be at work, whether lower capability producers are more likely to broaden their niches. We do so by regressing a winery's niche width in a vintage on its niche width in the previous vintage and other covariates. We use a winery's maximum number of stars and maximum price in the previous vintage as proxies for capability. Column 3 in Table 3 presents estimates of the relevant effects from a fractional logit regression estimated using quasi-likelihood.[4] The measures of lagged capability (maximum stars and maximum price) have positive effects, but these effects are not significant. (Unreported analyses indicate that this relationship does not change over time.) Thus a simple capability story does not seem to be at work here.

Two measurement issues also deserve attention. First, one might argue that *barriques*-only and *barrique-botti* wines are just variations of a single international style. Although we think that our interviews and background research justify the decision to distinguish three styles, we explored the consequences of combining the middle and modern styles into one category. Columns 1 and 2 in Table 4 reports the key results (for our three hypotheses) that come from analysis combining the two more modern styles in constructing niches. Our analysis collapsed the bottom two ratings. Columns 3 and 4 in Table 4 report estimates of the key coefficients from specifications that use the full set of four rankings with three styles. Columns 5 and 6 address the two measurement issues conjointly; using two styles with four rankings. We continue to find a similar pattern of (significant) effects of the niche width measures to that seen in Table 2, and conclude that these two measurement decisions are not decisive for the results that bear on our theory.

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[4]Fractional logit regression analyzes proportions as dependent variables in a logit form (Papke and Wooldridge, 1996). We used STATA's glm procedure with the binomial family as the distribution function and the logit as the link function.

Table 3 Determinants of change in niche width (Quasi-likelihood estimates of a fractional logit regression using rankings from the Veronelli guide)

	Coef.	(S.E.)
Constant	5.95	(3.12)
Niche width$_{v-1}$	5.83**	(0.812)
Average niche width$_{v-1}$	20.7**	(5.21)
Fuzzy experience	−0.059	(0.077)
Fuzzy experience × niche width	0.410*	(0.166)
Maximum price$_{v-1}$	0.649	(0.588)
Maximum stars$_{v-1}$	0.106	(0.069)
Barbaresco producer	−0.02	(0.157)
Tenure	−0.058*	(0.023)
Year (1980 = 0)	−1.74**	(0.559)
Log-pseudo-likelihood	−78.3	
Deviance	302.5	
Pearson χ^2	137.3	
Number of observations	459	

Robust standard errors are given in parentheses. v denotes vintage year.

**$P < 0.01$, *$P < 0.05$.

8. Discussion

The use of fuzzy category theory allows us to treat situations that lie intermediate between the cases of clear and dissolved boundaries, those in which boundaries blur to varying degrees. In this sense, our research illuminates the endogenous origins of category erosion. It suggests that the boundaries of categories (styles, here) erode when actors create portfolios of offerings from diverse categories. Thus, critics found it easier to dimensionalize the differences between modernists and traditionalists when the former relied on a combination of barriques and botti and the latter used only botti. Pervasive increases in generalism constitute a kind of deregulated action; they undermine the criteria for critical decisions and choices (Rao *et al.*, 2005). Thus, the most important contribution of this research is its demonstration that categorical fuzziness undermines the appeal of all members of the category.

This study also speaks to the research on spanning styles in cultural markets. Consider, for instance, the emergence of recorded jazz (Phillips and Owens, 2004; Phillips and Kim, 2009). During the 1920s dominant record companies blended stylistic elements that appealed to distinct subaudiences, namely African-American groups whose music bore low-brow connotations and white orchestras aligned with the European-American cultural elite. Bringing together these two elements

Table 4 Determinants of critics' ratings of the wines using alternative measurements (maximum likelihood estimates of ordered logit regressions)

	Two Winemaking Styles		Three Winemaking Styles and Four Ratings		Two Winemaking Styles and Four Ratings	
	Veronelli Guide	Gambero Rosso Guide	Veronelli Guide	Gambero Rosso Guide	Veronelli Guide	Gambero Rosso Guide
	(1)	(2)	(3)	(4)	(5)	(6)
	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)
Niche width	−7.59** (1.94)	−5.31** (1.97)	−3.00** (1.00)	−3.05* (1.39)	−5.18** (1.22)	−4.85* (2.46)
Average niche width	−14.1** (2.98)	−17.9** (3.85)	−12.3** (2.79)	−12.4** (2.94)	−13.5** (3.22)	−16.5** (3.30)
Niche width × average niche width	87.2** (22.5)	58.6** (20.1)	40.5** (12.0)	37.7** (12.3)	63.3** (16.0)	53.6* (25.3)
Cutpoint 1	−0.360 (1.33)	4.80 (1.94)	−2.52 (1.22)	4.30 (1.35)	−4.30 (1.08)	2.90 (1.22)
Cutpoint 2	1.41 (1.30)	7.00 (1.93)	1.03 (1.21)	7.67 (1.37)	−0.763 (1.07)	6.26 (1.26)
Cutpoint 3			2.78 (1.19)	9.86 (1.37)	0.997 (1.04)	8.45 (1.24)
Log-pseudo-likelihood	−1453.3	−1158.2	−1935.2	−1843.3	−1933.9	−1843.4
Wald χ^2	161.0**	321.9**	238.4**	432.9**	204.1**	349.3**
No. observations	1952	1952	1952	1952	1952	1952
No. producers	164	164	164	164	164	164

Robust standard errors adjusted for clustering on producers are in parentheses. All specifications include effects of all of the covariates listed in Table 2.

v denotes vintage year.

*$P<0.05$, **$P<0.01$, †$P<0.10$ (two-tailed).

(a style and a kind of performer), however, reduced the competence of the performers and engendered a perilous inconsistency in the identities that companies presented to the audience. In response, recording companies started employing pseudonyms for their jazz records as a way to preserve their identity and commercialize inferior, identity-threatening products. In our setting, wine tasting exposes the comparative inability of straddling producers to execute styles, so deception would not work.

Our research also underlines the need for more study of how the effects of generalism on appeal (and success) vary with experience. An earlier study of the labor market for film actors showed that the penalty for generalism declines with experience (Zuckerman *et al.*, 2003). By contrast, our study of a very different context shows that the penalties increase with (fuzzy) experience.[5] This finding might reflect expertise-related changes and identity-related changes.

Consider expertise. As we argued above, generalism impedes learning, because the technical challenges facing the winemaker vary from harvest to harvest and possibly from vineyard to vineyard in the same harvest. In such a complex learning environment, generalism might be useful for learning which method works best for executing a given style in which conditions (and thus be useful for decisions about changing a profile of methods). But it complicates the task of learning about how to adjust any one method to changing conditions. As a result, a style generalist accumulates less expertise (at a given tenure) in a style than a specialist, in that style as we assumed in constructing a fuzzy measure of experience.

Likewise, a lack of focus might prevent a clear identity from forming in the audience. Someone who has always lacked focus would be hard to categorize initially and also subsequently, while the identities of continuously focused winemakers presumably strenthen with tenure. Moreover, a producer who shifts from a style focus becomes hard to classify and its identity becomes clouded. If a clear and coherent identify offers advantages, then the advantage of a style focus would increase with tenure. If our findings differ from Zuckerman *et al.* (2003), to some extent the nature of the context does too. In the film industry, and by implication in other contexts where the audience interface is similarly structured, the observability of an actor's identity precedes evaluation of performance. Focused identities thus provide lesser benefits for experienced producers in the audience evaluation process – for example, greater consideration for acting jobs in Hollywood. In the wine industry this is not always the case. Some critics evaluate producer offerings with incomplete information (like Veronelli) or no information (like Gambero Rosso) and identity can be undisclosed. Generalist experience then helps less than experience accumulated in one category or style.

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[5]Note, however, that Zuckerman et al. (2003) did not employ a fuzzy characterization of experience.

Earlier we sketched arguments about focus and appeal that build on capability or identity, and we claimed that they point in the same direction. It would be interesting to try to separate the arguments empirically; and it appears that our comparison of ratings in the two critical publications would allow an opportunity to do so. Recall that GR professes to rely only on blind tastings meaning that evaluators do not know the identities of the producers. By contrast, Veronelli critics taste at the winery so they know the producers' identities. Thus it would seem that reactions to spanning by GR would reflect only differences in capabilities to enact styles between producers with focused and broad niches. But the Veronelli reactions might also entail reactions to blurred identities due to style spanning. If so, we would expect that the estimated effect of niche width on appeal would be stronger for the Veronelli ratings. But we do not find this. Recall that the results are surprisingly similar for the two sets of ratings. Does this mean that clarity of categorical identity does not matter?

Issues of categorical membership make have most impact when the evaluation task deals with great ambiguity (e.g. it pertains to forecasts about features that cannot be observed at the time of a consumption decision) as Podolny (1993) argued in considering the effects of status in markets. The wine critics can judge the aroma and tastes of the wines in both blind and non-blind tastings. The results from analysis of the Gambero Rosso ratings reveal that style spanning produces detectable diminishment of appeal to the critics. The Veronelli raters do not need to see the evidence of stylistic incoherence produced by style spanning to come to similar conclusions.

We think that the situation is over-determined in the sense that either assessments of style-niche width or inspection of the product would be enough to reach the conclusion. Note that we lack the key comparison with a view that sees identities of producers and makes evaluations without tasting, but this is an absurd case in our context. Only if this comparison case showed no effect of spanning would we be in a position to conclude that identity does not play any role in the critical penalty for spanning.[6] Therefore, we conclude that style spanning reduces appeal by weakening style-related capabilities and possibly by clouding identities. We leave it to future research to unravel the causal connections.[7]

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[6]One open question is why generalists persist at all in this market. One possibility, of course, is that the existence of such a penalty might not be common knowledge. Another possibility, as we suggested earlier, concerns hedging. Decisions about styles must be made 3–5 years before a winery releases a wine on the market. Producers might worry that fickle consumer tastes will change in the interim. Risk-averse producers can try to hedge against this uncertainty by generalizing in styles. This interpretation agrees with the intuitions behind classic niche width theory's claim that coarse-grained environmental uncertainty favors generalism.

[7]Research by Leung and Sharkey (2009) is very helpful in this respect. This research analyzes success of applicants in a peer-to-peer online lending site. In the early years of the site's operation, individual applicants could affiliate with at most one group. The leaders of each group could list a set of categorical affiliations (e.g. occupations, gender, religious affiliations of members of the group). Groups differed in breadth (number) of affiliations claimed; and funders could click through to

Finally, the preceding discussion might suggest that weakened categorical boundaries make critical evaluation less decisive, because the schemas critics can apply are more ambiguous. We do not think this is the case. An early suggestion by Weber is that that social actors become particularly responsive to charisma in situations of categorical ambiguity (Greenfeld, 1985). A charismatic leader can restore a sense of order where chaos reigns (and is also held less accountable for her judgment). In art, critics can make global evaluations of artists rather than technical judgments of the qualities inherent in particular works. This transforms evaluations into normative statements (about what is good or bad in a genre). In the presence of common category spanning and audience disagreement about the meanings of categories, critics work to redefine boundaries by justifying their role as even more important because valuation in a confused domain requires more skill and creativity (and grants greater prominence to evaluators). In the context of widepread spanning of categories we can expect to observe erosion of boundaries followed by revitalization of categories supported by audience charisma, for example critics rewarding the reinterpretation of established styles. Such dynamics can be partly responsible for cyclical processes in the success of a category's offerings.

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pages that described the members of the groups and their loans. Holding constant the applications credit score, size of the proposed loan and other relevant covariates, Leung and Sharkey find that applicants from groups have much higher probability of receiving funding than those who do not affiliate with groups but that among the latter, the probability of funding declines significantly with the number of categorical affiliations claimed by the group. Midway through the observation period, the website stopped listing the categorical affiliations of the groups. Once the funders could not see whether a group claimed a narrow or diffuse categorical identity, the effect of diffuse identity disappears in an analysis with fixed-effects for groups (allowing a comparison of the effect of membership in a group before and after the removal of the categorical information).

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Appendix: data on critical evaluations

Our data come from two best-selling Italian wine guides. *I Vini di Veronelli* reviews over 10,000 "good Italian wines" by 2000 "good winemakers" yearly. Its founding

editor, Luigi Veronelli, was Italy's most celebrated wine and food critic. The guide enjoys wide circulation among expert and non-expert audiences, including wine merchants, restaurant sommeliers, and enthusiast consumers. The second source, *I Vini d'Italia*, is published by Gambero Rosso Editore and the Slow Food organization. It covers "a vast selection of the country's labels," including over 2200 wineries and 16,000 wines in recent editions. The annual list of top-ranking wines in these guides receives considerable attention inside and outside the industry. For example, every major Italian newspaper covers the release of new ratings.

The two sources enjoy similar prominence; but they differ in several ways. First, Veronelli (but not GR) reports the type of barrel employed to age each wine, the crucial information for our measurements of styles. Second, this guide's evaluations reflect tastings done by Veronelli or one or more of his three coeditors, all wine experts. (After Veronelli's death in 2004, the coeditors continued the operation). Daniel Thomases, who has done much of the tastings of Barolos and Barbarescos, explained when we asked about the method he uses to evaluate wines:

> Sometimes I do blind tasting... most of the time I don't. The primary thing I consider is the correspondence between the territory and the vintage. This correspondence is reflected in the nose, the smell. A good wine possesses the perfume of the varietal in the context of a territory... The second feature I consider is the body, the structure.

The taster's evaluations are definitive: "I do not discuss the rating with the other co-editors, my decisions are final. If I am doubtful, I visit the producer another time before rating its wines."

The GR guide uses a more collective approach. When we interviewed the editors in late 2005, one explained:

> We use blind tasting... Our tasting is collective, and so the decision is collegial. When we decide the *Tre Bicchieri* (the highest rating) we are in a group of 8–10 tasters. ... [T]he guide is made with the contribution of more than 120–130 tasters who make the selections in every geographical area... activities, primarily tasting, are coordinated by commissions that are responsible for a region or a relevant winemaking area... I am in every commission in Piedmont because I am the coordinator of tasting. The other members are people who know how to taste and appreciate wine and slow food. The commission members hold their positions on a voluntary basis...
>
> This tasting is the first selection. Its outcome is an evaluation made on a 100-point scale. Then the wines with scores of 85 points or higher proceed to the final round. (In the guide we don't assign points because the scale is translated into the "glass" scale.) Very often, before the finals we have doubts so we re-taste and re-evaluate some wines... The finalist

wines are gathered in Rome; and in this second stage we give the *Tre Bicchieri* awards.

Our data come from the vintages covered by the guides from their first volume (1991 for Veronelli and 1988 for GR) through the 2005 edition. The requirement that Barbarescos age at least two years and Barolos at least three years prior to their release imposes a time lag on our data. For example, the 2005 edition reviews wines from the vintages of 2001 and 2002 as the latest available for Barbaresco, and 2000 and a portion of 2001 wines for Barolo. To allow for full comparability across the wines we end our observation window with the vintage. We start our analysis with the vintage of 1982 because our interviews and reviews of documentary materials revealed that experimentation with cellar techniques was negligible before the 1980s.

Our sample includes all labels of Barbarescos and Barolos from the vintages 1982–2000 that were reviewed by both guides. Taking account of the availability of covariates, the sample we analyze includes 1952 label-vintage-producer observations for 164 producers.