Ideology and Brand Consumption

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Abstract:

Do mundane daily choices, such as what brands to buy in a supermarket, reflect aspects of our values and ideologies? This article presents a large scale field study to test whether traits associated with a conservative ideology, as measured by voting behavior and religiosity, manifest in routine, seemingly inconsequential product choices that consumers make. Across a variety of frequently purchased products, we show that both measures of conservatism are associated with a systematic preference for established national brands (as opposed to their generic substitutes), and a lower propensity to try newly launched products. These findings correspond with the psychological traits associated with a conservative ideology such as preference for tradition and status quo, ambiguity/uncertainty avoidance, and skepticism towards new experiences.

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Commentary in the popular press as well as opinion polls reveal polarization in the US population on a range of issues such as the role of government and taxes, affirmative action and aid to the disadvantaged, gun control, the death penalty, stem cell research, abortion, and the sanctity of marriage. Across a large set of empirical studies, a self-reported left-right or a conservative-liberal scale has been found to provide a useful and parsimonious approximation to opinion on these wide ranging issues (1,2). Recent research in social and political psychology provides a theoretical framework for the liberal-conservative divide by linking ideological proclivities to dispositional (or situational) differences in psychological needs, cognitive styles, and personality traits (3,4,5,6). For example, individuals who gravitate towards conservative ideology are found to score low on integrative complexity, openness to new experiences, and tolerance for uncertainty/ambiguity; and relatively high on measures of conscientiousness, dogmatism, and need for order, structure, and closure (5,7,8). In addition to explaining enduring differences in public opinions and attitudes, the psychological approach to the study of ideology has provided a rich account for differences in many theoretical domains such as the basis of moral foundations (9) and system justification (10).

While the role of ideological differences in the socio-political domain is intuitive, can psychological traits associated with broad ideologies also get reflected in mundane, seemingly inconsequential daily choices? Using an extensive field data on product purchases and measures of conservativeness, we examine whether traits such as preference for tradition and status quo, uncertainty avoidance, and skepticism to new experiences get manifested in routine purchase decisions. Products and brands can of course serve as a source of selfexpression, and firms devote substantial advertising resources to develop brand images and elicit specific feelings, attitude, and thoughts for their products. However, the majority of these tend to be socially visible, often more expensive (e.g. hi-tech gadgets, fashion, automobiles) image products that can serve as a signal of social status or make a statement about individual personality. The focus in this article instead is on low involvement, frequently purchased products sold at supermarkets that are primarily for private consumption. Extensive research in psychology shows that judgment and behavior is often guided by implicit cognition that is spontaneous, effortless, and unconscious (11,12), suggesting that even mundane daily choices such as what brand of detergent to buy or whether to try a new flavor of yogurt, can reflect aspects of our ideologies, values, and personality traits.

Our empirical strategy relies on creating county level measures of brand consumption and relating those to measures of conservativeness. For the former, we utilize a comprehensive IRI scanner database (13) of 1,860 stores belonging to 135 major supermarket chains in the US. The data span 47 U.S. markets, which cover 416 counties that represent 47% of the total US population. Each store reports weekly UPC level sales over a period of 6 years, from 2001 to 2006. The data is available for 26 product categories that cover a wide range of industries, including both edible (e.g., frozen pizza, canned soup) and non-edible (e.g., paper towels, laundry detergent) products. Two aspects of the consumer packaged (CPG) industry

are particularly appealing for our research purposes. First, most CPG categories in the US comprise of several established national brands as well as generics (private labels or store brands). Industry reports and academic research in marketing suggests that generics are perceived by consumers as riskier and of lower quality than national brands (14,15). Since a major function of branding is to lower uncertainty and simplify decision making (16), we might expect that, controlling for other socio-economic factors, aspects of conservative values such as preference for tradition and convention, and lower tolerance for ambiguity and complexity may get reflected in higher reliance on national brands as opposed to generics. A second characteristic of the CPG industry is frequent introductions of new products. In our data we observe over 4,000 new products ranging from new brands to minor modifications of existing products (e.g. a new flavor). Personality traits such as skepticism to new experiences linked with conservative ideology might get reflected in lower acceptance and penetration of new products. In the empirical application, we create two measures of brand consumption at the county level: (1) Market share of generics in each category, and (2) Market share of new product introductions. Summary statistics on both measures are reported in Table 1.

[Insert Table 1 here]

To operationalise conservatism, we use measures of *political voting* and *religiosity*, both of which have high degree of correspondence with conservative values. For example, both political voting and religiosity associate positively with values that preserve order and tradition, protect against uncertainty and threat, and negatively with measures of openness to new experiences and change (5, 17). Research in cognitive neuroscience suggests that both political orientation and religiosity are marked with similar reduced reactivity in the anterior cingulated cortex (ACC), a cortical system that is involved in cognition and emotion (18, 19). Finally, there is extensive empirical support for both political orientation and religiosity as measures of conservative ideology. For instance, data from the biannual American National Election Studies (ANES) survey (1948 to 2008) shows significant correlations between selfreported measures of conservative ideology and religious belief (r = 0.17, p value < 0.0001) and republican political preference $(r = 0.39, p \text{ value} < 0.0001)^2$. However, the correlation between religious belief and political preference is not significantly different from zero (r = -0.00, p value = 0.789), suggesting that both variables capture some aspects of conservative values independent of each other. It is important to note however that although the overall correlation between religiosity and voting behavior is negligible, the correlation between individual religious beliefs and Republican voting may be positive (e.g. Evangelical) or negative (e.g. Judaism, Catholic).

Capturing religiosity at the aggregate county level is non-trivial as religiosity is a complex, multi-dimensional construct. It encompasses the various levels at which religion impacts people, including values and beliefs, affective feelings of spirituality and commitment, and behaviors such as prayer and church attendance. In this article we use data from the 2000 Association of Religion Data Archives (ARDA), which collects information on adherence and congregations by denomination for every county. Our primary measure of religiosity is

² Liberal-Conservative and Political party affiliation are measured on a 7-point scale. Religiosity is based on response to the survey question - "Is Religion Important to the Respondent" on a binary scale.

adherence defined as the percent of the county population that is a member of a religious organization, or attends religious services on a regular basis. In the empirical application we conduct a variety of robustness checks using alternative measures of religiosity. To measure political conservatism, we use county level voting outcomes for the presidential elections from 1980 to 2004, and define political conservativeness as the average percentage of votes in this time span for the Republican presidential candidates. Again we test the robustness of results using alternate measures such as voting outcomes for only recent presidential years. Similar to the ANES survey data, we find insignificant correlation between religiosity and voting behavior at the county level, although the correlation for Evangelical and Republican voting is significantly positive.

Given the data above, our empirical approach involves conducting a series of regressions of brand consumption on measures of conservatism, while controlling for socio-economic characteristics and marketing mix variables. In addition, since the quality of store brands or generics may differ across retailers and categories, the regressions include a robust set of category and chain specific control variables. Results from the regression model are presented in Table 2. The dependent variables in these regressions are the market shares of the generics (left panel) and the market share of the new products in the year after launch (right panel)³. The first row shows the results estimated by pooling our data from all categories, and the subsequent rows show the results from category-level analysis. Looking first at the pooled estimates for the generics (left panel, top row), we find that the coefficients associated with both religiosity and Republican are negative and statistically significant, indicating that market shares for generics are significantly lower in conservative counties. It is important to note that these estimates are identified based on the variation in market shares between stores that belong to the *same* retail chain serving different counties. Thus, they capture the net impact of conservativeness after controlling for a variety of socio-economic characteristics, marketing mix variables, and a robust set of fixed effects that absorb any differences in product quality across retail chains. The subsequent rows in the left panel show the results from the category level analysis, where the dependent variable is the generic brand share in each category. The category level results are quite telling. In 20 out of the 26 categories, the effect of religiosity on generic brand penetration is negative and statistically significant. For six categories the effect is insignificant, and there is not a single category where religious counties are associated with higher market shares for generics. With minor exceptions, the pattern repeats for the republican voting estimates as well⁴. These results provide strong evidence that conservative markets are associated with lower market shares for generics and a higher reliance on established national brands.

The right panel in Table 2 provides estimates for the new product penetration. The first row shows the pooled (across all categories) estimates, where we find that the market share of

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³ We transform the share to log(share/1-share). This is a monotonic transformation that ensures full support on the real line.

⁴ Estimates for two categories (Toothpaste and Milk) are positive. Note that these are somewhat unusual categories. Toothpaste has extremely low market share for generics (0.5%) and Milk has very large market share (over 75%). See Table 1.

new products is significantly lower in counties with higher level of religiosity and republican vote. Looking at the category level estimates, we again find either negative (62% of the estimates) or insignificant (38% of the estimates) coefficients for both religiosity and voting. In none of the categories do we find higher penetration of new products in conservative counties. Taken together, these results provide strong evidence that more conservative markets are associated with a higher reliance on established national brands, and a lower penetration of new products. Although not displayed to conserve space, we conducted a variety of robustness checks using alternative definitions of conservative measures and potential data related issues, and found similar results⁵. In addition, we find a consistent pattern across individual religious denominations (Evangelical Protestant, Mainline Protestant, Catholic, Judaism and Islam), suggesting our results are not driven by any particular denomination, and represent a deeper psychological influence of religiosity.

[Insert table 2 here]

In summary, our empirical results provide strong evidence that conservative ideology is associated with higher reliance on established national brands (as opposed to generics) and a slower uptake of new products. These results are consistent with traits typically associated with conservatism such as higher risk aversion, skepticism towards new experiences, and a general preference for tradition, convention, and status quo. Previous research on the psychological basis of ideology has primarily focused on explicit and consciously accessible self-reported measures of attitude and opinions (5). Our results suggest aspects of ideological differences may exist not just in a reasoned and explicit form (20), but may indeed be reflected in our mundane daily behavior. It is noteworthy that these effects manifest in routine, low-involvement product purchases that rarely exceed a few dollars. The inherent risks of product trial or post-purchase dissonance are likely to be minimal for these products. Future research in other domains may reveal additional psychological dimensions associated with ideology, and how they manifest in consumption behavior. For example, in our data we find that (controlling for other factors in a regression based model) conservative markets have a significantly higher market share for domestic beers (e.g. Budweiser, Miller) as opposed to foreign imports (Guinness, Heineken), reflecting aspects of nationalism typically associated with conservatism.

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⁵ Results of all robustness checks are provided in the supplement

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Table 1: Summary statistics for generic and new brand shares

	Generic Brands Share		New Products Share			
Category	Mean	Std Dev	# Products	Mean	Std Dev	
Blades	14.72	7.91	83	1.94	7.91	
Coffee	12.57	9.31	254	1.02	9.31	
Deodorant	0.83	1.12	148	0.94	1.12	
Diapers	21.33	11.35	22	4.41	11.35	
Frozen Pizza	12.09	8.85	39	3.35	8.85	
Frozen Dinner	1.39	1.86	183	1.20	1.86	
Household Cleaner	6.79	5.45	117	1.05	5.45	
Hot Dog	9.85	8.00	133	1.73	8.00	
Laundry Detergent	6.49	5.83	180	2.16	5.83	
Margarine/Butter	13.17	8.34	61	2.29	8.34	
Mayonnaise	12.95	8.39	56	2.07	8.39	
Milk	75.72	19.82	78	1.86	19.82	
Mustard/Ketchup	23.29	8.78	192	1.31	8.78	
Toothpaste	0.55	1.02	209	0.82	1.02	
Peanut Butter	24.95	10.59	29	6.18	10.59	
Photographs	20.12	15.79	45	2.08	15.79	
Razors	6.00	6.91	30	7.96	6.91	
Salty Snacks	9.73	6.89	708	0.28	6.89	
Sauces	7.75	5.45	504	0.55	5.45	
Soda	11.21	9.57	301	0.53	9.57	
Soup	11.46	6.38	244	0.84	6.38	
Sugar Substitute	10.96	9.73	45	4.20	9.73	
Tissue Paper	24.88	11.91	38	3.14	11.91	
Toilet Paper	18.39	11.19	162	1.30	11.19	
Toothpaste	17.81	8.54	150	1.01	8.54	
Yogurt	22.13	12.50	140	1.31	12.50	
All categories	16.48	17.18	4,151	1.29	17.18	

Table 2: Parameter estimates from the regression of conservative and controls on generics share and new product share by category. Number in brackets represents the standard error and the * represents significant at a 95% confidence level. Marginal impact is the percentage change in market share with one standard deviation increase in Conservativeness (Religiosity and Republican Party vote).

	Generic Brand Share			New Product Share				
	Religion	Republican	Marginal	Religion	Republican	Marginal		
	g.o	периопсин	Impact		перавнен	Impact		
All categories			1			9		
All categories	-0.30 (0.02) *	-0.31 (0.03) *	-4 %	-0.41 (0.03) *	-0.46 (0.04) *	-6 %		
By category			1			8		
Blades	-0.25 (0.08) *	-0.59 (0.08) *	-5 %	-0.35 (0.11) *	-0.43 (0.12) *	-5 %		
Coffee	-0.04 (0.08)	-0.33 (0.08) *	-2 %	-1.03 (0.16) *	-0.56 (0.17) *	-5 %		
Deodorant	0.19 (0.13)	-0.01 (0.12)	1 %	-0.38 (0.09) *	-0.51 (0.09) *	-11 %		
Diapers	-0.69 (0.08) *	-0.33 (0.08) *	-5 %	-0.38 (0.20)	-0.67 (0.21) *	-6 %		
Frozen Pizza	-0.11 (0.08)	-0.13 (0.08)	-1 %	-0.75 (0.30) *	0.04 (0.31)	-7 %		
Frozen Dinner	0.09 (0.09)	0.17 (0.09)	2 %	-0.49 (0.09) *	-0.52 (0.10) *	-5 %		
Household Cleaner	-0.20 (0.08) *	-0.45 (0.08) *	-4 %	-0.52 (0.14) *	-0.87 (0.14) *	-7 %		
Hot Dog	-0.66 (0.08) *	-0.47 (0.08) *	-7 %	-0.43 (0.18) *	-0.15 (0.18)	-9 %		
Laundry Detergent	-0.27 (0.08) *	-0.44 (0.08) *	-4 %	-1.27 (0.26) *	-0.45 (0.27)	-4 %		
Margarine/Butter	-0.49 (0.08) *	-0.27 (0.08) *	-4 %	-0.26 (0.24)	-0.65 (0.25) *	-11 %		
Mayonnaise	-0.63 (0.08) *	-0.68 (0.08) *	-8 %	0.11 (0.24)	-0.14 (0.24)	-6 %		
Milk	-0.30 (0.08) *	0.37 (0.08) *	0 %	-0.53 (0.25) *	-0.35 (0.25)	0 %		
Mustard/Ketchup	-0.60 (0.08) *	-0.33 (0.08) *	-5 %	0.02 (0.19)	-0.83 (0.20) *	-6 %		
Toothpaste	-0.29 (0.12)	0.51 (0.12) *	1 %	-0.51 (0.15) *	-0.36 (0.15) *	-5 %		
Peanut Butter	-0.29 (0.08) *	-0.29 (0.08) *	-3 %	-0.17 (0.48)	-0.04 (0.46)	-6 %		
Photographs	-0.58 (0.08) *	-0.26 (0.09) *	-5 %	-0.09 (0.22)	-0.55 (0.23) *	-1 %		
Razors	-0.53 (0.11) *	-0.14 (0.11)	-4 %	-0.14 (0.13)	-0.60 (0.14) *	-4 %		
Salty Snacks	0.04 (0.08)	0.02 (0.08)	0 %	-0.05 (0.07)	-0.62 (0.08) *	-5 %		
Sauces	0.11 (0.08)	-0.37 (0.08) *	-2 %	-0.77 (0.08) *	-0.54 (0.08) *	-4 %		
Soda	-0.41 (0.08) *	-1.01 (0.08) *	-9 %	-0.30 (0.09) *	-0.51 (0.10) *	-9 %		
Soup	-0.34 (0.08) *	-0.13 (0.08) *	-3 %	0.03 (0.13)	-0.10 (0.13)	0 %		
Sugar Substitute	-0.27 (0.08) *	-0.41 (0.08) *	-4 %	-0.52 (0.32)	-0.03 (0.32)	-3 %		
Tissue Paper	-0.25 (0.08) *	-0.64 (0.08) *	-5 %	-0.28 (0.29)	-0.18 (0.28)	-3 %		
Toilet Paper	-0.20 (0.08) *	-0.57 (0.08) *	-4 %	-0.57 (0.09) *	-0.32 (0.10) *	-6 %		
Toothbrush	-0.37 (0.08) *	-0.48 (0.08) *	-5 %	-0.72 (0.08) *	-0.19 (0.09) *	-6 %		
Yogurt	-0.16 (0.08) *	-0.09 (0.08)	-1 %	-0.22 (0.11) *	-0.52 (0.12) *	-5 %		
Control variables								
Fixed effects	_ ,	Chain * State * Y FE = 47,232)	ear	Brand * State * Year (# FE = 53,389)				
Demographics and	Promotion, Feature, Display, Income, Elderly, Unemployment, Education, HH Size, Afr.							
marketing mix	American, Metro							
Total observations		176,357		150,068				