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Cognitive Biases in Consumer Commerce: Neuromarketing Perspectives on Irrational Brand Loyalty

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Abstract: Consumers routinely remain loyal to brands that offer no measurable advantage in price, quality or convenience, a pattern that rational-choice models struggle to explain. This paper examines irrational brand loyalty through the combined lens of behavioral economics and neuromarketing. It synthesizes evidence on seven cognitive biases (status quo bias, loss aversion and the endowment effect, mere exposure, anchoring, dissonance reduction, brand-label expectancy and self-congruence) and relates each to the neural valuation, reward and self-referential systems reported in the neuroimaging literature. An integrative review design is used to map each bias onto the four stages of consumer loyalty and to grade the strength of the behavioral and neuroimaging evidence behind it. The synthesis indicates that loyalty is rarely produced by a single bias. It emerges when several biases reinforce one another across the purchase journey, and brand cues can alter experienced pleasantness and not only stated preference. The paper also cautions that neuroimaging evidence for brand effects remains modest, that reverse inference is a persistent risk, and that bias-based marketing raises ethical concerns about autonomy and transparency. The study closes with implications for marketers, regulators and researchers.

Keywords: Cognitive Biases, Neuromarketing, Brand Loyalty, Consumer Behavior, Behavioral Economics, Status Quo Bias, Loss Aversion, Mere Exposure, Consumer Neuroscience, Marketing Ethics

INTRODUCTION

Classical consumer theory assumes that shoppers compare alternatives, weigh costs against benefits and settle on the option that maximizes their utility. Everyday commerce tells a different story. Shoppers queue for a particular smartphone when a rival offers equivalent specifications for less, keep paying a premium for a familiar detergent they could not identify in a blind test, and defend a brand against criticism as if it were a friend. Behavioral research explains part of this gap by showing that human judgment relies on fast, automatic processes that are efficient but systematically biased [1,2]. In a commercial setting, those biases do not merely distort single choices. They can stabilize into habits of repurchase that look like loyalty.

Loyalty itself is usually defined as a deeply held commitment to rebuy a preferred product consistently in the future, despite situational influences and marketing efforts that could cause switching [3]. This definition leaves room for the behavior to be driven by reasons the consumer would endorse, such as better quality, as well as by reasons the consumer would not. This paper is concerned with the second group. It uses the term *irrational brand loyalty* for repurchase and advocacy behavior that persists, or is stronger than, what the consumer's own experienced satisfaction would justify. The term is descriptive rather than pejorative: the biases involved often save effort and reduce risk, and many are adaptive in other contexts.

Neuromarketing offers a complementary window on these phenomena. By applying neuroimaging and psychophysiological methods to marketing questions, it aims to observe responses that self-report cannot capture, such as automatic valuation and emotional arousal [4]. The field has also attracted justified skepticism about cost, interpretability and commercial overstatement [5]. A balanced reading is therefore needed: neural evidence can sharpen and constrain behavioral accounts, but it should not be treated as a direct readout of what consumers want.

The paper pursues three objectives. First, it identifies the cognitive biases most plausibly responsible for loyalty that exceeds rational justification. Second, it relates each bias to the neural systems that neuromarketing and

decision-neuroscience studies have implicated. Third, it assesses how strong the supporting evidence is and what follows for marketing practice and consumer protection. Section II reviews related work, Section III describes the review design and analytical framework, Section IV presents the synthesis, and Sections V and VI conclude and outline future research.

Related Works

Behavioral Foundations of Consumer Bias: Prospect theory showed that people evaluate outcomes as gains and losses relative to a reference point and weigh losses more heavily than equivalent gains [6]. Applied to brands, this loss aversion makes switching feel riskier than staying, which is consistent with status quo bias, the tendency to favor the current or default option over alternatives of similar value [7]. The endowment effect, in which owning an item raises its perceived worth [8], extends the same logic to products and subscriptions that consumers have already adopted. Repeated exposure to a stimulus increases liking for it even without conscious recognition [9], which gives familiar brands an advantage that is independent of product merit. Cognitive dissonance theory adds that people reduce the discomfort of conflicting beliefs by revising their attitudes, so a purchase already made tends to be defended rather than reevaluated [10]. Valuations are also shaped by arbitrary reference points: willingness to pay can be moved by irrelevant anchors while remaining internally coherent [11]. How an offer is framed can reverse preferences between objectively identical options [12], and consumers track purchases in separate mental accounts rather than as a single budget [13].

Brand Relationships and Loyalty

Consumer research has long treated brands as relationship partners. Fournier showed that consumers form relationships with brands that vary in quality and carry personal meaning [14]. Aaker's work on brand personality demonstrated that consumers attribute human-like traits such as sincerity and excitement to brands and use them for self-expression [15]. Brand love, a more intense emotional attachment, has been linked to positive word of mouth and stronger loyalty [16]. Oliver's staged model, which moves from cognitive to affective to conative to action loyalty, remains a widely used description of how preference hardens into commitment [3].

Neuroscientific Evidence

Decision neuroscience has converged on a common valuation network. A coordinate-based meta-analysis of fMRI studies found that the ventromedial prefrontal cortex and ventral striatum respond consistently to subjective value across many kinds of reward [17]. Marketing studies have used these regions as a reference. In a study of culturally familiar drinks, brand knowledge biased preference toward a familiar cola and recruited memory and control regions, indicating that brand information is integrated into value rather than merely added to it [18]. When identical wine was labeled with a higher price, participants reported greater pleasantness and showed stronger activity in medial orbitofrontal cortex, which suggests that marketing cues can alter experienced pleasantness itself [19]. Neural responses during product preview and price display have also predicted later purchase decisions beyond self-reported preference, with nucleus accumbens activity tracking product appeal while excessive prices engaged the insula and reduced medial prefrontal activity [20]. Studies of favorite brands report engagement of reward circuitry, including the ventral striatum [21], and work on consumer–brand relationships reports neural and physiological patterns that overlap with systems associated with interpersonal attachment [22].

Research Gap

Prior work tends to examine one bias or one neural finding at a time. Few contributions connect the biases to the stages of loyalty or state how strong the evidence behind each link is. This paper addresses that gap.

METHODOLOGY

Research Design

This study uses an integrative narrative review. It does not report new participant data and does not claim the statistical weight of a meta-analysis. Source material was drawn from three bodies of peer-reviewed literature: behavioral economics, consumer-behavior research on brands and loyalty, and cognitive and consumer neuroscience. Priority was given to foundational and widely replicated studies, to experiments that used brand, price or product stimuli directly, and to methodological critiques of neuromarketing [4], [5]. Findings were organized thematically and compared across literatures to identify where behavioral and neural accounts agree, where they diverge, and where evidence is thin.

Analytical Framework

Seven biases were selected because each has strong behavioral support and a plausible route to repeat purchasing: status quo bias, loss aversion with the endowment effect, mere exposure, anchoring, dissonance reduction, brand-label expectancy and self-congruence. Each was mapped to the four loyalty stages in Oliver's model [3] to show where it is most influential. Each was also assigned a candidate neural substrate drawn from the studies in Section II, and a grade for behavioral support and for neuroimaging support (High, Moderate or Limited). Grades reflect the author's judgment of

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Table 1: Cognitive Biases, Mechanisms and Candidate Neural Substrates in Brand Loyalty

Bias	Core mechanism	Candidate neural substrate (indicative)	Typical commercial expression
Status quo bias	Current option preferred; switching framed as a risk	Valuation circuitry with loss-related signals [17], [20]	Auto-renewal, default settings, habitual repurchase
Loss aversion and endowment	Owned or adopted items valued above equivalents	Insula and prefrontal value signals [20]	Free trials, expiring loyalty points
Mere exposure	Familiarity raises liking without recognition	Reward and memory systems [18], [21]	Ad repetition, ubiquitous packaging
Anchoring	Arbitrary reference points shape willingness to pay	Medial prefrontal value signals [11], [20]	"Was/now" pricing, premium decoys
Dissonance reduction	Prior choice defended to restore consistency	Prefrontal conflict monitoring (hypothesized)	Post-purchase defense, brand advocacy
Brand-label expectancy	Brand or price label raises experienced pleasantness	Medial orbitofrontal cortex [19]	Premium positioning, branded versus generic
Self-congruence	Brand serves as an extension of identity	Reward and self-referential systems [21], [22]	Brand communities, identity-based campaigns

replication, directness of brand-related stimuli and consistency across studies, and should be read as qualitative. Table 1 summarizes the resulting framework.

RESULTS AND ANALYSIS

Biases Rarely Act Alone

The most consistent finding of the synthesis is that irrational loyalty is a compound outcome. A consumer first encounters a brand through repeated exposure, which builds familiarity at low cost [9]. A familiar brand is then selected more often, which creates a purchase history that status quo bias treats as a default [7]. Once the consumer has invested money or identity, loss aversion and the endowment effect make leaving feel costly [6], [8], and dissonance reduction recasts doubts as reasons to stay [10]. Each step makes the next more likely, and the sequence can continue after the product has ceased to be the best available. This is why single-bias interventions, such as a price cut, often fail to dislodge loyal customers: they address one link in a chain that other links continue to hold.

Mapping Biases to Loyalty Stages

Mapping the seven biases onto Oliver's four stages [3] shows that different biases dominate at different points. Early loyalty rests on beliefs and reference points, middle stages on liking and commitment, and the final stage on routine and the cost of leaving. Table 2 summarizes the mapping.

What Neural Evidence Adds

Neuroimaging contributes three things that behavioral data provide less directly. First, it suggests that brand effects operate on valuation and not only on reporting. When a price label raised pleasantness ratings and medial orbitofrontal activity for identical wine [19], the result was inconsistent with the simple view that consumers merely say they prefer the expensive option. Second, it shows that familiar brand information is integrated with sensory experience and engages memory and control regions [18], which helps explain why blind and branded evaluations diverge. Third, neural measures taken before choice have predicted purchases beyond self-report [20], supporting the idea that part of the decision is made by processes consumers cannot easily describe.

These contributions have limits. Most studies use small samples, laboratory stimuli and a handful of well-known brands, which restricts generalization. Activity in a region such as the ventral striatum is not uniquely diagnostic of liking, and inferring a psychological state from activation alone, known as reverse inference, is a recognized source of error [5]. The valuation meta-analysis supports using these regions as a general indicator of subjective value [17], not as a loyalty detector.

Strength of the Evidence

Table 3 grades the support for each bias. The pattern is asymmetric: behavioral evidence is strong for nearly all biases, whereas neuroimaging evidence is moderate at best and concentrated in brand-label expectancy and price processing. Claims that neuroscience has "explained" brand loyalty therefore go beyond the data.

Implications and Ethical Considerations

For marketers, the synthesis suggests that loyalty built on bias alone is fragile, because it depends on conditions such as low switching friction and sustained exposure. Brands that pair these mechanisms with genuine product value gain loyalty that survives a competitor's better offer. For consumers, awareness helps: asking whether one would choose the brand again today, at its current price and with no purchase history, counters status quo and endowment effects.

For regulators, the central question is when influence becomes exploitation. Defaults, expiring rewards and anchor prices are common and lawful, yet they weaken autonomy when consumers cannot easily see or reverse them. The distinction between nudges that preserve free choice and transparency and those that do not [23] offers a workable test: practices should be easy to opt out of,

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Table 2: Dominant Biases at Each Stage of Brand Loyalty

Loyalty stage	Dominant biases	Consumer experience
Cognitive	Anchoring, framing, mere exposure	Brand seems adequate or best relative to reference points and familiarity
Affective	Mere exposure, brand-label expectancy, self-congruence	Liking grows with use; the brand feels pleasant and "like me"
Conative	Dissonance reduction, endowment	Commitment to rebuy forms; doubts are reinterpreted
Action	Status quo bias, loss aversion	Repurchase becomes routine; switching feels costly

Table 3: Evidence Grades by Bias (Qualitative Author Judgment)

Bias	Behavioral evidence	Neuroimaging evidence
Status quo bias	High	Limited
Loss aversion and endowment	High	Moderate
Mere exposure	High	Limited
Anchoring	High	Limited
Dissonance reduction	High	Limited
Brand-label expectancy	High	Moderate
Self-congruence	Moderate	Limited

honestly described and not dependent on exploiting vulnerability. Neuromarketing raises further concerns about the privacy of neural and physiological data, which consumers may not realize they are disclosing.

CONCLUSION

Irrational brand loyalty is best understood as the accumulated result of several cognitive biases that reinforce one another across the purchase journey, not as a single flaw in judgment. Exposure builds familiarity, defaults and loss aversion discourage switching, dissonance reduction protects earlier choices, and brand labels and identity cues change how products are experienced and valued. Neuroimaging studies are consistent with this account, particularly in showing that brand and price information can influence experienced pleasantness and that valuation-related activity can predict purchases.

The evidence is, however, uneven. Behavioral support is strong, while neural support is modest, based on small samples and open to reverse-inference error. Findings should therefore be treated as constraints and hypotheses rather than proof. In practice, brands that rely on bias alone risk fragile loyalty and growing ethical and regulatory scrutiny, whereas brands that combine familiarity and identity with real value can build commitment that withstands competition. Researchers, practitioners and regulators all benefit from keeping apart influence that consumers can recognize and endorse and influence that they cannot.

Future Work

Several directions follow from this review. Larger, preregistered studies should test whether combinations of biases predict loyalty better than single biases, using longitudinal purchase data in place of single-session laboratory tasks. Cross-cultural samples are needed, since most brand neuroimaging studies draw on Western participants and a few global brands, and fast-growing consumer markets such as India deserve specific attention. Lower-cost measures such as EEG, eye tracking and physiological sensing could be combined with behavioral logs to improve ecological validity, provided that consent and data-protection safeguards are in place.

Experimental work should also evaluate debiasing interventions, including transparent defaults and reminders at renewal, to see whether they change loyalty without harming consumer welfare. Finally, researchers should examine how digital personalization and recommendation systems amplify exposure, anchoring and default effects, and whether disclosure requirements reduce their influence.

REFERENCE

[1] D. Kahneman, *Thinking, Fast and Slow*. New York, NY, USA: Farrar, Straus and Giroux, 2011.

[2] A. Tversky and D. Kahneman, "Judgment under uncertainty: Heuristics and biases," *Science*, vol. 185, no. 4157, pp. 1124–1131, 1974.

[3] R. L. Oliver, "Whence consumer loyalty?," *Journal of Marketing*, vol. 63, special issue, pp. 33–44, 1999.

[4] N. Lee, A. J. Broderick, and L. Chamberlain. "What is 'neuromarketing'? A discussion and agenda for future research," *International Journal of Psychophysiology*, vol. 63, no. 2, pp. 199–204, 2007.

[5] D. Ariely and G. S. Berns. "Neuromarketing: The hope and hype of neuroimaging in business," *Nature Reviews Neuroscience*, vol. 11, no. 4, pp. 284–292, 2010.

[6] D. Kahneman and A. Tversky. "Prospect theory: An analysis of decision under risk," *Econometrica*, vol. 47, no. 2, pp. 263–291, 1979.

[7] W. Samuelson and R. Zeckhauser. "Status quo bias in decision making," *Journal of Risk and Uncertainty*, vol. 1, no. 1, pp. 7–59, 1988.

[8] D. Kahneman, J. L. *et al*, "Experimental tests of the endowment effect and the Coase theorem," *Journal of Political Economy*, vol. 98, no. 6, pp. 1325–1348, 1990.

[9] R. B. Zajonc, "Attitudinal effects of mere exposure," *Journal of Personality and Social Psychology*, vol. 9, no. 2, pt. 2, pp. 1–27, 1968.

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[10] L. Festinger, *A Theory of Cognitive Dissonance*. Stanford, CA, USA: Stanford University Press, 1957.

[11] D. Ariely, G. Loewenstein, and D. Prelec, "Coherent arbitrariness: Stable demand curves without stable preferences," *Quarterly Journal of Economics*, vol. 118, no. 1, pp. 73–105, 2003.

[12] A. Tversky and D. Kahneman, "The framing of decisions and the psychology of choice," *Science*, vol. 211, no. 4481, pp. 453–458, 1981.

[13] R. H. Thaler, "Mental accounting and consumer choice," *Marketing Science*, vol. 4, no. 3, pp. 199–214, 1985.

[14] S. Fournier, "Consumers and their brands: Developing relationship theory in consumer research," *Journal of Consumer Research*, vol. 24, no. 4, pp. 343–373, 1998.

[15] J. L. Aaker. "Dimensions of brand personality," *Journal of Marketing Research*, vol. 34, no. 3, pp. 347–356, 1997.

[16] B. A. Carroll and A. C. Ahuvia, "Some antecedents and outcomes of brand love," *Marketing Letters*, vol. 17, no. 2, pp. 79–89, 2006.

[17] A. Bartra, J. T. *et al.* "The valuation system: A coordinate-based meta-analysis of BOLD fMRI experiments examining neural correlates of subjective value," *NeuroImage*, vol. 76, pp. 412–427, 2013.

[18] S. M. McClure *et al.* "Neural correlates of behavioral preference for culturally familiar drinks," *Neuron*, vol. 44, no. 2, pp. 379–387, 2004.

[19] H. Plassmann *et al.* "Marketing actions can modulate neural representations of experienced pleasantness," *Proceedings of the National Academy of Sciences*, vol. 105, no. 3, pp. 1050–1054, 2008.

[20] B. Knutson *et al.* "Neural predictors of purchases," *Neuron*, vol. 53, no. 1, pp. 147–156, 2007.

[21] M. Schaefer and M. Rotte. "Favorite brands as cultural objects modulate reward circuit," *NeuroReport*, vol. 18, no. 2, pp. 141–145, 2007.

[22] M. Reimann, R. *et al.* "How we relate to brands: Psychological and neurophysiological insights into consumer–brand relationships," *Journal of Consumer Psychology*, vol. 22, no. 1, pp. 128–142, 2012.

[23] R. H. Thaler and C. R. Sunstein. *Nudge: Improving Decisions About Health, Wealth, and Happiness*. New Haven, CT, USA: Yale University Press, 2008.