

Postprint: Psycholinguistic Mechanisms of Anticipatory Emotions Elicited by Large-Scale Online Collective Promotions

Authors: Lu Changbao, Wang Ating, Lu Cuimei

Date: 2023-10-09T00:00:00+00:00

Abstract

Based on theories of psycholinguistics, prefactual thinking, and anticipatory emotions, this study takes conditional sentence structures presented through combinations of conditional constraints and material incentives as the entry point. By exploring the cognitive antecedents of anticipatory emotion generation, the dominance mechanism of positive anticipatory emotions, the division-of-labor mechanism between conditional and incentive promotional vocabulary in eliciting anticipatory emotions, the reinforcement mechanism of auxiliary promotional vocabulary in eliciting anticipatory emotions, the framing mechanism of surface and deep structures of complex discount sentences in influencing anticipatory emotions, and the utility attenuation mechanism of multiple promotional incentive combinations in influencing anticipatory emotions, this research summarizes the communication design principles of large-scale online aggregation promotions and their psycholinguistic mechanisms in eliciting anticipatory emotions, while simultaneously enriching existing theories.

Full Text

Preamble

Advances in Psychological Science

2023, Vol. 31, No. 9, 1595-1610

© 2023 Institute of Psychology, Chinese Academy of Sciences

<https://doi.org/10.3724/SP.J.1042.2023.01595>

Conceptual Framework

The Psycholinguistic Mechanism of Large-Scale Online Aggregated Sales Promotion Inducing Future-Oriented Emotions*

LU Changbao, WANG Ating, LU Cuimei
(School of Economics and Management, Fuzhou University, Fuzhou 350108, China)

Abstract

Based on psycholinguistics and theories of prefactual thinking and future-oriented emotions, this research takes the conditional clause naturally presented by the combination of conditional limitations and material incentives as a point of penetration. By exploring the cognitive antecedents of future-oriented emotions, the dominance mechanism of positive future-oriented emotions, the division-of-labor mechanism between conditional and incentive promotional vocabulary in inducing future-oriented emotions, the strengthening mechanism of auxiliary promotional vocabulary in inducing future-oriented emotions, the framing mechanism of surface and deep structures of complex discount sentences in influencing future-oriented emotions, and the utility attenuation mechanism of multiple promotional inducement combinations in influencing future-oriented emotions, this study enriches existing theories while summarizing the communication design principles of large-scale online aggregated sales promotion and its psycholinguistic mechanisms for inducing future-oriented emotions.

Keywords: large-scale online aggregated sales promotion, future-oriented emotions, psycholinguistics, prefactual thinking, conditional clause

Classification: B849: F713.55

Introduction

Large-scale online aggregated sales promotions represented by “Double Eleven” and “Black Friday” have evolved into highly influential commercial events (Lu et al., 2022; Raymen & Smith, 2016). In these promotional activities, e-commerce platforms employ a combination of multiple promotional inducements including time limits (lasting one to three days), quantity limits (controlling product sales volume), aggregation (numerous brands simultaneously offering exceptional discounts), and threshold-based discounts (reducing cash after reaching a certain amount) (Lu & Zhuang, 2018), pushing platform-based retail promotions to the extreme. Moreover, such promotions allow ample communication time (approximately twenty days) and are equipped with various site-wide promotional tools. Through the following impactful promotional language and copywriting, they strive to create a carnival atmosphere, ignite consumption enthusiasm, and stimulate frenzied purchasing (Lu, Ke et al., 2020; Lu et al., 2021).

First, using copy such as “Thousands of products, countless discounts,” “2,000 brands, 50,000 hot items! All items up to 50% off, come grab them now,” and “Ten billion brand coupons, additional discounts after Double Eleven, grab them immediately,” they emphasize the abundance of participating brands, products,

and discounts to create atmosphere. Second, adopting site-wide promotions like “Spend 199, save 99 immediately” and “Spend 288 across stores, receive additional gifts” with “threshold discount” and “threshold gift” labels. Third, encouraging advance consumption through language with advance binding implications such as “Pay a 50 yuan deposit now to count as 100 yuan” and “Pay deposit first, pay balance on Double Eleven.” Finally, repeatedly emphasizing time-limited flash sales such as “Starts at 13:00, starts at 21:00,” and quantity limitations such as “Last 2 hours, limited quantity, no restocking when sold out, you’ll regret not buying,” reminding consumers to purchase quickly.

Faced with this language bombardment, will consumers find it hard to contain their excitement and eagerness, imagining countless discounts, millions of people snapping up deals, and time and quantity limitations? Overall, existing research addresses this question from several levels. First, in terms of design principles, large-scale online aggregated sales promotion, as a general term for large-scale retail concentrated promotions organized by e-commerce platforms with massive enterprise participation and simultaneous discounts across multiple product categories (Lu et al., 2021), shares the same “temptation principle” as everyday promotions but also has unique characteristics. By comparison, general promotions as “sales accelerators” include a series of inducements aimed at facilitating rapid decision-making (Belch & Belch, 2014), using benefits such as discounts to make actions more valuable while employing conditional restrictions like time limits to urge quick purchases (Ding & Zhang, 2020; Jin, 2008). Large-scale online aggregated sales promotion builds upon this foundation by innovatively integrating numerous promotional inducements, greatly enhancing the impact and appeal of promotional activities (Lu & Zhuang, 2018; Raymen & Smith, 2016). Overall, large-scale online aggregated sales promotion features distinct characteristics including longer activity cycles, broader promotional communication, and more diverse application of promotional tools, making it a promotional commercial event that integrates “economy, entertainment, mass participation, and ritual” (Lu & Zhuang, 2018). Second, in terms of psychological mechanisms, existing research suggests that when massive promotional products combine with specific conditional restrictions such as time and quantity limits, opportunity costs (time pressure) and competitive mechanisms like snapping up deals begin to form (Lu & Zhuang, 2018), inducing “regret from not buying” or “anticipated regret” (Inman & Mcalister, 1994), which become key factors driving consumers’ irrational motivations. Although this negative emotion-focused research approach can partially explain the carnival phenomenon caused by large-scale online aggregated sales promotion, the positive emotional forces underlying the carnival have not received due attention. Third, in emotion research, existing studies overemphasize anticipated regret, viewing it as the dominant emotion influencing promotional decisions. However, recent research has recognized the role of future-oriented emotions related to future purchases—pre-outcome emotions (anxiety and hope) and anticipated emotions (anticipated delight and anticipated regret)—in large-scale online aggregated sales promotion decisions (Lu, Peng et al., 2020; Zhu et al., 2009). Therefore, it is worth noting that while

existing research has its rationality in using promotional design principles to explain emotional generation in promotional decisions and how emotions influence consumers' rapid decisions, providing reasonable explanations for general promotional mechanisms, given the particularity of large-scale online aggregated sales promotion, existing research not only overlooks consumers' dependence on large-scale online aggregated sales promotion communication planning, language design, and information search in online consumption decisions, but also ignores the logical connections between promotional inducements, the linguistic characteristics of promotional advertisements, and their role in inducing consumption emotions—especially the important influence of discourse context formed by various promotional benefits and conditional restrictions (time or quantity limits) combinations on consumption emotions. This prevents providing psycholinguistic explanations for the role of highly provocative text in urging consumers to take quick action. Moreover, existing research also overlooks the diversity of emotions in large-scale online aggregated sales promotion decisions, particularly the key role of positive emotions in creating consumption carnivals, which limits innovation and development in promotional decision research and practice.

In summary, there remains a certain disconnect between existing research and large-scale online aggregated sales promotion practice, necessitating the introduction of new perspectives for more systematic exploration. Using language cues to replace traditional information analysis is crucial for advancing theoretical construction on large-scale online aggregated sales promotion communication in virtual spaces. In view of this, this research, based on psycholinguistics and combined with the actual communication context, promotional sentence patterns, and vocabulary usage formed by large-scale online aggregated sales promotion due to virtual communication needs, systematically explores the language psychological mechanisms of such promotions in inducing consumers' future-oriented emotions and decisions, according to basic promotional design principles and focusing on the conditional clauses naturally presented by the combination of conditional restrictions and material incentives. This aims to enrich existing promotional emotion research theoretical systems while laying a psycholinguistic foundation for online consumption and promotional communication theory construction.

2. Literature Review and Commentary

To make the review more targeted, the following sections will unfold from four aspects: psycholinguistics, future-oriented emotions, promotional design principles and the mechanism of future-oriented emotions in large-scale online aggregated sales promotion decisions, with brief commentary on existing research.

2.1 Psycholinguistics and Its Application in Marketing

Psychology and linguistics are closely related. On one hand, language use is a psychological activity; on the other hand, most human psychological activities rely on language (Carroll, 2007). As the most universal symbol in social

environments, language is an important tool people use to achieve goals, intentions, and desires, reflecting human behavior, psychological states, and mental representations. If language is connected with cognitive and other psychological processes, then language can be regarded as “the implicit psychological causality in language” (Semin & Fiedler, 1991), meaning that language constructs specific psychological processes for us. Psycholinguistics originated in the 1940s-1950s and differs from “psychology of language,” which focuses on macro linguistic patterns (Carroll, 2007). It studies psychological phenomena in language activities from a micro perspective and examines human language mechanisms through the correspondence between psychological processes and linguistic structures (Gu, 2011). This theory posits that, on one hand, language is a tool that can represent and influence emotions (Semin & Fiedler, 1991); on the other hand, discourse contexts, sentence patterns, and vocabulary composed of language are important media influencing cognition and emotion. For example, when people read written discourse, they create internal contexts and form experience-based conceptualization and schematic knowledge (Halliday & Hasan, 1989); in conditional sentences, grammatically determined linguistic sequential relationships lead to counterfactual reasoning behaviors (Greene, 1972); in sentence comprehension, people may focus only on surface structure while ignoring implicit deep structure (Carroll, 2007); in terms of vocabulary, the Linguistic Category Model proposed by Semin and Fiedler (1991) conducted in-depth exploration of the ability of different vocabulary to convey emotions and meanings from the perspective of abstractness. Based on currently available literature, research in the marketing field mainly revolves around the linguistic category model. First, since each type of vocabulary has different degrees of abstractness, different vocabulary plays different roles in conveying purposes, intentions, and desires (Semin & Fiedler, 1991; Yuan et al., 2013). The use of advertising language as a design process should focus on differences in how different advertising styles create listener attention situations and construct listener cognition and emotion (Semin & Fiedler, 1991; Wu et al., 2019). Second, the abstractness of online review words affects consumer brand impressions and purchase intentions (Yuan et al., 2013). To a large extent, wording and phrasing have important impacts on corporate marketing and communication effects. In summary, since consumers in virtual spaces need to search for key clues based on promotional language and related advertising information to make rapid decisions, and large-scale online aggregated sales promotion as a communication tool also needs to rely on advertising bombardment to create carnival atmospheres, the theoretical system of psycholinguistics can be fully utilized to comprehensively sort out the linguistic characteristics and underlying psycholinguistic mechanisms of large-scale online aggregated sales promotion in inducing consumers’ future-oriented emotions and decisions.

2.2 Future-Oriented Emotions and Their Mechanisms

Research on future-oriented emotions originated from goal-directed decision theory. This theory suggests that people often encounter striving goals that require

effort in decision-making (Bagozzi et al., 2003). Since human behavior is influenced by emotions, the process should include emotional content (Taylor et al., 2005). Moreover, since striving goals are related to future events, emotional reactions around goal achievement can be collectively referred to as future-oriented emotions, including pre-outcome and anticipated types (Baumgartner et al., 2008). Pre-outcome emotions are immediate emotions generated when individuals predict future risks and uncertain events, related to the possibility of events occurring, and include hope related to excitement and anxiety related to worry (Loewenstein et al., 2001). Anticipated emotions are emotions experienced when individuals imagine desired or undesired future events that have occurred or not occurred, typical emotions not currently experienced but foreseeable in the future (Baumgartner et al., 2008), related to information valence (Bagozzi et al., 2003), including “anticipated delight from imagining desired event achievement” and “anticipated regret from imagining desired event non-achievement” (Bagozzi et al., 2016; Sandberg et al., 2016). In terms of mechanisms, future-oriented emotions are generally considered evaluation results of event significance, related to prefactual thinking (Bagozzi et al., 2003). Prefactual thinking refers to “conditional propositions about causal connections between behaviors and outcomes in events that may or may not occur in the future,” meaning that before events occur, people conduct mental simulations of “If I take action X, then I will obtain outcome Y” or “If I do not take action X, then I will miss outcome Y” (Epstude et al., 2016). Literature review shows that comparing current states with potentially better future results constitutes upward prefactual thinking, inducing positive emotions; comparing current states with potentially worse future results constitutes downward prefactual thinking, inducing negative emotions (Epstude et al., 2016; Ji et al., 2017). In summary, since conditional restrictions and material incentives form conditional clauses after combination (Lu & Li, 2018), and conditional restrictions correspond to possibility while material incentives correspond to outcomes (Lu, Peng et al., 2020), research can both combine prefactual thinking with conditional clauses to study the cognitive process of future-oriented emotions and combine pre-outcome and anticipated emotion mechanisms to explore the cognitive antecedents of future-oriented emotions and the division of labor between conditional and incentive promotional language in inducing future-oriented emotions in large-scale online aggregated sales promotion decisions.

2.3 Promotional Design Principles and Characteristics of Large-Scale Online Aggregated Sales Promotion

Generally, enterprises promote consumption by providing certain benefits under specific conditions, which is known as sales promotion. As an incentive tool, promotion includes two types of inducements aimed at facilitating rapid decision-making (Jin, 2008). One type uses conditional restrictions such as time limits, quantity limits, membership (VIP), or purchase thresholds (e.g., threshold discounts, threshold gifts, deposit bonuses) to require consumers to make decisions based on conditions (Wei et al., 2017). The other type uses

material incentives such as discounts, coupons, gifts, and lotteries to create substantial benefits that attract consumers to act (Li et al., 2007). If conditional restrictions and material incentives are combined, they form an “if...then...” conditional clause. For example, in time-limited discounts, “If you buy on time, then you will enjoy the discount” ; conversely, “If you do not buy on time, then you will not enjoy the discount.” To a large extent, since conditional restrictions and material incentives are diverse in form, countless promotional formats can be created according to marketing needs, and large-scale online aggregated sales promotion is precisely the product of this philosophy. Overall, conditional restrictions and material incentives are not only core elements of promotional communication but also the key determinants of consumers’ mental models and behavioral tendencies in promotional decisions. Notably, existing research seems to focus more on innovations in the formal combination of conditional restrictions and material incentives to enhance promotional effectiveness in sales and customer relationship maintenance, while ignoring the dependence of current online promotional activities on language design and communication, missing the opportunity to comprehensively clarify the psychological mechanisms of communication between promotions and consumers at the linguistic level. Overall, studying large-scale online aggregated sales promotion’ s appeal from language, especially in combination with the correspondence between the two types of promotional inducements and conditional clauses, not only helps improve the current situation where research one-sidedly focuses on promotional information and its combined effects but also can enhance the systematic and holistic nature of promotional and large-scale online aggregated sales promotion decision research through the theoretical framework of psycholinguistics. In fact, research on promotional framing effects is closely related to psycholinguistics, which is why this effect is also called “verbal embellishment effect,” reflecting the phenomenon where different presentations of language lead to different cognitive outcomes (Mandel, 2014). For example, the two promotional frames “50% off 1998 yuan” and “1998 yuan minus 999 yuan” may have different effects on purchase intentions. Existing research shows that loss-reduction promotional frames cause time pressure and anticipated regret, and if time is ample, this effect disappears (Hao & Zeng, 2017). This indicates that promotional language affects consumer cognition, which in turn affects language understanding, demonstrating the great advantage of exploring the linguistic effects of large-scale online aggregated sales promotion from a psycholinguistic perspective.

2.3.2 Operation Model and Characteristics of Large-Scale Online Aggregated Sales Promotion Similar to offline aggregated promotions, large-scale online aggregated sales promotion relies on all brands on the platform to simultaneously conduct promotions, gathering popularity and driving performance (Lu & Zhuang, 2018). As a type of large-scale retail promotion, it innovates around the two core elements of promotion and forms the following characteristics in its operation model.

First, it comprehensively employs multiple inducements such as time limits,

quantity limits, and aggregation (Raymen & Smith, 2016), possessing advantages in enabling rapid purchases that are difficult for general promotions to match. Second, it has nearly a one-month preparation period and various prepayment systems, strictly distinguishing it from traditional promotions that only last 3-7 days. This approach allows people to better utilize opportunities and transforms induced behavior from traditional impulse buying to goal-directed, planned purchasing (Swilley & Goldsmith, 2013). Third, surrounding activity communication, it comprehensively uses provocative language to creatively design scripts for the number of participating brands and promotional inducements, urging people to act quickly (Ren, 2016). Fourth, it widely uses site-wide promotional tools such as “threshold discounts,” allowing consumers to freely match among massive promotional products to form the most cost-effective purchase combinations. Overall, large-scale online aggregated sales promotion not only shortens the time limit to one day (in recent years, “Double Eleven” and other events have been extended to about three days) but also simultaneously gathers massive products to provide substantial “one-stop discounts.” From this, we can see that large-scale online aggregated sales promotion shares both commonalities and differences with general promotions. In terms of commonalities, both revolve around conditional clauses formed by conditional restrictions and material incentives to prompt consumers to act quickly. In terms of differences, on one hand, large-scale online aggregated sales promotion features more promotional inducements, longer preparation periods, and widespread use of site-wide promotional tools like “threshold discounts,” making the combination of conditional restrictions and material incentives more diversified and presenting greater appeal. On the other hand, large-scale online aggregated sales promotion in virtual environments not only relies more on promotional script design but also uses extensive advertising and communication activities to highlight the overall effect of promotional inducement combinations in stimulating consumer participation enthusiasm. Therefore, taking large-scale online aggregated sales promotion as the research object allows exploration of not only the impact of entire conditional clauses but also the role of auxiliary vocabulary attached to the clauses, understanding how online promotional discourse context influences emotions.

2.4 Promotion Decision-Making and Emotion Generation in Large-Scale Online Aggregated Sales Promotion

2.4.1 Promotion Decision-Making and Its Accompanying Emotional Reactions Despite innovations and developments in promotions such as “quantity control,” “identity control” (becoming a VIP), and “purchase amount control” (threshold gifts), promotional decisions are ultimately the result of thinking conducted around the combination of conditional restrictions and material incentives. In the decision-making process, attributes related to promotional inducements such as “causal relationships, surprise, emotional valence, emotions, and information availability” can be routinely and automatically evaluated through intuition, triggering emotional reactions. Specifically, when

time and benefits are combined, consumers perceive opportunity costs due to worry about missing promotional deadlines (Lu, Ke et al., 2020), thereby increasing sales speed. Given the existence of opportunity costs, decisions about “buying” or “not buying” trigger emotions such as “regret from not buying” or “anticipated regret.” Among these, “regret from not buying” reflects consumers’ anxiety and anticipated regret about not making timely decisions, while “anticipated regret” refers to the annoyance imagined from missing opportunities (Inman & Mcalister, 1994). Currently, numerous studies have confirmed the existence of these negative emotions, and the closer to the promotional deadline, the stronger the anxiety and anticipated regret (Maule et al., 2000). Although some studies also point out that promotions can bring hedonic benefits (Chandon et al., 2000; Lu & Li, 2018), most research overemphasizes opportunity costs, making anticipated regret and other negative emotions the main research focus. Notably, since different promotional language cues combine to produce different emotional valences through evaluation, focusing only on negative emotions in promotional decisions cannot comprehensively clarify the role of emotions in promotions. It is also necessary to conduct classified research on the behavioral driving differences between positive and negative emotions surrounding promotional inducement combinations.

2.4.2 Cognitive Prerequisites and Internal Mechanisms of Emotion Generation in Promotional Decisions Emotion generation in promotional decisions is not achieved overnight but results from cognitive processing, reflecting evaluation of the impact of relevant promotional events on individuals. Research findings on the cognitive mechanisms of emotion generation in promotional decisions mainly include two aspects. First, in terms of cognitive modes, since promotions emphasize “fast thinking” (Kahneman, 2012), many studies view promotional decisions as intuition heuristic-based decisions, with emotions being the result of “affective evaluation” of promotion quality (Lu & Hu, 2018). To a large extent, this also indicates that people in promotional decisions are easily influenced by current information, brand strength, and reference prices (Bayraktar et al., 2015). Second, regarding emotion-cognition interaction, if conditional restrictions and material incentives are viewed as a whole, their combination relationship induces subjective/objective time pressure (Lu, Peng et al., 2020) and forms negative emotions such as anxiety and anticipated regret. Among these, objective time pressure mainly reflects the impact of objective time limits, causing negative emotions like anxiety (Maule et al., 2000); subjective time pressure mainly reflects the impact of material incentives, embodying the true meaning of “time is money” and anticipated regret. Overall, shortening promotion time (e.g., flash sales) or increasing promotion intensity can effectively enhance promotional effects and related emotional intensity (Lu et al., 2021). Although existing research reveals the cognitive mechanisms of emotion generation from a promotional design principle perspective, research on specific cognitive prerequisites of emotion generation is insufficient, failing to summarize the characteristics of promotion-induced emotions and thereby summarize

the cognitive antecedents of specific emotions, highlighting the necessity and importance of studying related emotions from the conditional clauses presented by promotions.

2.4.3 Principles of Future-Oriented Emotion Generation in Large-Scale Online Aggregated Sales Promotion From the perspective of the ultra-long preparation period of large-scale online aggregated sales promotion, consumers can not only determine purchase goals based on their own needs but also measure the possibility of grabbing discounted products according to time and quantity limits and make efforts accordingly (Lu & Zhuang, 2018), making it also a goal-directed decision. Existing research finds that the aggregation scale, time limits, and quantity limits of large-scale online aggregated sales promotion have significant impacts on both pre-outcome and anticipated emotions (Lu et al., 2022). Among these, larger aggregation scale induces stronger hope, anxiety, anticipated delight, and anticipated regret; time limits play a moderating role in the impact of aggregation scale on hope and anxiety, while quantity limits moderate the impact of aggregation scale on hope, anxiety, and anticipated regret (Lu, Ke et al., 2020). Additionally, future-oriented emotions induced by large-scale online aggregated sales promotion fluctuate significantly as the official promotion time approaches. Overall, whether far from or near the official promotion time, anticipated emotions maintain relatively high intensity; but when approaching the official time, the intensity gap between anticipated and pre-outcome emotions significantly narrows (Lu et al., 2021). Not only that, but the effects of positive emotions in both anticipated and pre-outcome emotions are stronger than negative emotions, indicating that positive emotions are key drivers of consumer participation in large-scale online aggregated sales promotion. In summary, although important progress has been made in research on emotions in large-scale online aggregated sales promotion decisions, it remains focused on exploring influencing factors of emotions, overlooking the impact of such promotional script design and marketing communication on future-oriented emotion generation. Therefore, further research is needed using the framework of psycholinguistics.

2.5 Research Commentary

In summary, since existing research has obvious deficiencies in exploring promotions as communication tools, and overlooks the role of conditional clauses formed by conditional restrictions and material incentives as well as important changes in online promotional language, it has not yet paid attention to the overall role of large-scale online aggregated sales promotion language and the psychological mechanisms of these languages in stimulating consumer purchases. As an interdisciplinary field integrating psychology and linguistics—psycholinguistics—provides a theoretical basis for comprehensively understanding the impact of promotional communication needs and language design on promotional effectiveness. To a large extent, from the perspective of psycholinguistics and using its research framework on sentence patterns, grammar, and vocabulary, existing

research still has the following key theoretical gaps.

First, it overlooks the overall impact of conditional clauses on future-oriented emotion generation in large-scale online aggregated sales promotion decisions. Current research remains focused on how to use diversified combinations of conditional restrictions and material incentives to improve promotional effects and explore factors influencing promotional effectiveness and key information, ignoring the particularity of the space where large-scale online aggregated sales promotion occurs, the dependence of promotions as communication tools on conditional clauses and the overall discourse constructed by such clauses, and the important influence of discourse context formed by combinations of various promotional benefits and conditions (time or quantity limits) on consumption emotions. From the internal connection between prefactual thinking and conditional clauses (Epstude et al., 2016), large-scale online aggregated sales promotion may induce upward and downward prefactual thinking, thereby inducing positive and negative future-oriented emotions (Epstude et al., 2016; Zhu et al., 2009). Therefore, this research uses the framework of psycholinguistics to explore the role of conditional clauses composed of conditional restrictions and material incentives, auxiliary promotional vocabulary attached to conditional clauses, and the context and discourse created by text in inducing future-oriented emotions, which will help further clarify the psycholinguistic mechanisms of large-scale online aggregated sales promotion in inducing future-oriented emotions.

Second, it overemphasizes negative emotions and their relationship with opportunity costs, ignoring the cognitive antecedents of emotion generation and their connection with conditional clauses, as well as the role of positive emotions in creating promotional carnivals. On one hand, from research conclusions that upward prefactual thinking occurs more easily than downward thinking (Epstude et al., 2016), positive future-oriented emotions may dominate in large-scale online aggregated sales promotion decisions. On the other hand, conditional restrictions and material incentives are located in different parts of conditional clauses, representing possibility and anticipated outcomes respectively (Bagozzi et al., 2016; Baumgartner et al., 2008), and thus may have specific divisions of labor in inducing future-oriented emotions. Overall, this research's proposal to combine the functional role of positive emotion dominance with the promotional carnival phenomenon not only helps fundamentally correct the problem of existing research one-sidedly emphasizing negative emotions like anticipated regret but also enables 梳理 the cognitive antecedents of the four future-oriented emotions based on the grammatical composition of conditional clauses and the functions of different parts, better mastering the induction mechanisms of specific emotions.

Third, it overlooks research on site-wide promotional tools such as “threshold discounts” and the possibility that the emotional arousal effect may weaken after combining multiple promotional inducements in online contexts. From the perspective of sentence deep structure and surface structure, promotional tools like “threshold discounts” naturally present conditional clause characteristics

in language. This presentation may produce a “verbal embellishment effect” (Mandel, 2014), causing consumers to focus only on surface structure while ignoring deep structure and all meanings, thereby generating cognitive biases and strong future-oriented emotions. Additionally, it should be noted that due to bounded rationality and cognitive miserliness (Lu & Hu, 2018), when large-scale online aggregated sales promotion combines multiple conditions and benefits, although it can be assumed they will jointly elevate future-oriented emotions, lazy consumers may “equate” certain cues (Li, 2016), thereby focusing only on dominant language cues and weakening the appeal generated by the combination of multiple inducements. Overall, based on sentence deep and surface structures, combined with theories of “verbal embellishment effect,” “bounded rationality,” “cognitive miserliness,” and “equate-to-differentiate,” this research provides new explanations for the occurrence of cognitive biases and irrational behaviors in promotional decisions from a psycholinguistic perspective, helping to clarify the consistency between information presentation methods in inducing cognitive biases and language sentence structures in “framing” people’s mental simulations and processes.

3. Research Framework

Based on the above review and commentary, this research intends to systematically reveal the language psychological process through which large-scale online aggregated sales promotion ignites consumer emotions, according to the research framework of psycholinguistics, combined with the actual communication context, promotional sentence patterns, and vocabulary usage formed by large-scale online aggregated sales promotion due to virtual communication needs, and based on basic promotional design principles. Specifically, there are six research objectives: (1) Combining the relationship between conditional clauses and prefactual thinking, as well as the characteristics of prefactual thinking and evaluation in large-scale online aggregated sales promotion, clarify the cognitive antecedents of anxiety, hope, anticipated regret, and anticipated delight; (2) According to the relationship between upward/downward prefactual thinking and positive/negative emotions, and the motivational advantages of upward prefactual thinking, clarify the dominance mechanism of positive future-oriented emotions; (3) Using the correspondence between pre-outcome/anticipated emotions and possibility/anticipated outcomes, explore the division-of-labor mechanism of two key promotional vocabularies—conditional vocabulary in inducing pre-outcome emotions and incentive vocabulary in inducing anticipated emotions; (4) Using differences in auxiliary promotional vocabulary in terms of concreteness/abstractness, part of speech, and emotional directionality, explore the strengthening mechanism of different types of auxiliary vocabulary on future-oriented emotions; (5) Based on the compressed conditional clause presented by complex discounts like “threshold discounts,” combined with the relationship between sentence surface and deep structures, and based on intuition heuristic theory, reveal from a psycholinguistic perspective the framing mechanism of surface structure in influencing future-oriented emotions and explain the promotional

verbal embellishment effect; (6) Combining the characteristics of simultaneous application of conditional restrictions and material incentives in large-scale online aggregated sales promotion, explore the utility attenuation mechanism after combining multiple key promotional language inducements and the differences between abstract and concrete promotional discourse in influencing anticipated and pre-outcome emotions. Ultimately, by achieving the above objectives, the psycholinguistic mechanism of large-scale online aggregated sales promotion in elevating emotions is systematically revealed. The theoretical framework of this research is shown in Figure 1 [Figure 1: see original paper].

3.1 Study 1: The Influence Mechanism of Conditional Restrictions and Material Incentives' Grammatical Relationship on the Cognitive Antecedents of Future-Oriented Emotions

Emotions are caused by important life events, are phenomena with purpose and social significance, and can help individuals seize opportunities and meet challenges (Reeve, 2008). All cognitive emotion theorists believe that: First, without cognitive evaluation antecedents of events, emotions will not occur. Second, it is evaluation rather than events that induce emotions (Reeve, 2008). Conditions (life events) trigger evaluations (good/bad), which then induce emotions (like/dislike), ultimately leading to actions (approach or avoidance). Lazarus (1991) also points out that when people make evaluations, they first need to see whether the situation they face is related to their own well-being. If well-being may be at risk, people will assess potential threats or benefits. Overall, evaluation involves both the relationship between events and individual welfare, goals, and self-relevance, and the "threat, controllability, and benefit" contained in the events themselves (Reeve, 2008), mainly having two levels. One is primary evaluation, related to self-relevance; the other is secondary evaluation, involving coping methods, abilities, and outcomes (Lazarus, 1991).

In summary, when consumers realize that large-scale online aggregated sales promotion is an important consumption event, they will naturally evaluate its promotional language and generate corresponding decision emotions, which is particularly important for online transactions. Literature review shows that language is the foundation of cognition and decision-making, which is helpful for understanding causal relationships between different events and individual thinking styles and psychological processes. From this perspective, in the process of large-scale online aggregated sales promotion inducing "fast thinking" (Kahneman, 2012) and carnival, "language as a communication tool" plays an important role that cannot be ignored. Compared with psycholinguistic research findings, the conditional clauses and grammatical relationships formed by conditional restrictions and material incentives not only determine the evaluation process but also become important clues for deducing the cognitive antecedents of future-oriented emotions. Specifically, the following key research questions need to be clarified.

First, since the prefactual thinking model is highly logically consistent with the

conditional clauses presented by promotions, it can be assumed that when consumers conduct mental simulations around large-scale online aggregated sales promotion activities, they are more likely to engage in “prefactual thinking” with parallel processing characteristics, thereby determining the evaluation process and model. Second, since future-oriented emotion generation is highly related to prefactual thinking, it can be assumed that prefactual thinking simulations around conditional restrictions and material incentives determine the content of cognitive antecedents for future-oriented emotions. Third, since upward and downward prefactual thinking include evaluations of good and bad future outcomes and determine the characteristics of future-oriented emotions, it can be assumed that the cognitive antecedents of anxiety and anticipated regret are related to downward prefactual thinking, while the cognitive antecedents of hope and anticipated delight are related to upward prefactual thinking. Fourth, combining the cognitive evaluation process of emotion generation, it can be assumed that: (1) The generation of the four future-oriented emotions is first related to self-relevance, that is, the desire to participate in large-scale online aggregated sales promotion is an important prerequisite for inducing corresponding emotional reactions; (2) According to the relationship between pre-outcome emotions and possibility and between anticipated emotions and imagined outcomes, first, the relationship between “missing out on discounts” evaluation and anticipated regret, “obtaining discounts” evaluation and anticipated delight, “too short time/too little quantity” evaluation and anxiety, and “possibility exists no matter what” evaluation and hope can be studied. Second, the relationships between “If you don’t act according to conditions, then you will miss discounts” and anticipated regret, “If you act according to conditions, then you will obtain discounts” and anticipated delight, “If you don’t act according to conditions, then you won’t be able to buy such discounted products” and anxiety, and “If you act according to conditions, then you have the opportunity to buy such discounted products” and hope can be studied. Ultimately, based on all the above research, the cognitive antecedents of the four future-oriented emotions in large-scale online aggregated sales promotion decisions can be summarized.

3.2 Study 2: The Influence Mechanism of Upward/Downward Prefactual Thinking on the Dominance Relationship of Positive/Negative Future-Oriented Emotions

Language and emotion, as two important human psychological activities, have an interactive relationship. On one hand, language has an important impact on emotion perception (Barrett et al., 2007), and semantic concepts influence emotion perception and can play a role in emotion regulation (Liu et al., 2009). On the other hand, emotions affect people’s interpretation of language information (Peng et al., 2006). For example, emotional backgrounds (such as emotional pictures), internalized emotional reaction patterns (such as physiological reactions, facial expressions), and emotional information carried by language itself have important impacts on information processing. The above research shows that studying future-oriented emotions in large-scale online aggregated sales

promotion decisions should not only combine promotional language presentation methods and communication characteristics but also explore the semantic concepts formed after these languages are communicated.

Overall, although research on anticipated regret and regret from not buying can reflect the intuitive decision-making characteristics of promotional decisions (Lu & Hu, 2018) and is highly consistent with enterprises' communication appeals of "missing this village means missing this shop," it should also be noted that under the vigorous promotion of e-commerce, large-scale online aggregated sales promotion has been shaped into a national carnival and a tool for boosting consumption. In fact, in explorations of the carnival characteristics of large-scale online aggregated sales promotion, researchers have not only pointed out the existence of positive emotions such as hope and pleasure but also found that their overall impact is greater than that of corresponding negative emotions. Additionally, according to Chandon et al. (2000), promotions not only bring consumers practical benefits such as monetary savings but also allow them to obtain joy and self-satisfaction in shopping. In summary, positive emotions such as hope and anticipated delight are not only worth studying but also need to be examined from the perspective of carnival.

Based on the above, this study will compare the role of positive emotions such as hope and anticipated delight with negative emotions such as anticipated regret and anxiety, and clarify the reasons for their dominant position in large-scale online aggregated sales promotion decisions.

First, from the above, we know that upward prefactual thinking considers the future to be better than the present, while downward thinking is the opposite (Epstude et al., 2016). Therefore, it can be inferred that upward thinking can trigger stronger positive emotions, while downward thinking triggers stronger negative emotions (Epstude et al., 2016; Simonson, 1992). Second, since upward thinking can motivate action more than downward thinking (Epstude et al., 2016; Simonson, 1992), it can be inferred that compared with negative future-oriented emotions (anxiety and anticipated regret), positive emotions (hope and anticipated delight) are more likely to be in a dominant position in promoting such decisions. If true, this can further reveal the emotional motivation for people's enthusiasm for participating in large-scale online aggregated sales promotion and viewing it as a "carnival." Third, given that positive emotions can induce positive purchase intentions (Zhu et al., 2009), it can be inferred that large-scale online aggregated sales promotion combining multiple benefits, as e-commerce platforms advertise, can bring consumers more "sense of gain" rather than other negative perceptions. Fourth, based on the above research results, it can be inferred that hope dominates over anxiety in pre-outcome emotions, and anticipated delight dominates over anticipated regret in anticipated emotions. In other words, positive future-oriented emotions are the key force driving large-scale online aggregated sales promotion decisions and deserve attention.

3.3 Study 3: The Division-of-Labor Mechanism of Conditional and Incentive Promotional Language in Inducing Pre-Outcome and Anticipated Emotions

Language expression has clear prompting effects (Dou & Hu, 2018). People in decision-making always tend to capture specific language cues and process and utilize them. In the context of large-scale online aggregated sales promotion, on one hand, since online shopping lacks support from other sensory experiences, consumers mainly rely on promotional language and related cues for rapid decision-making. On the other hand, language has special meanings, and since the directions of the two key types of promotional language are different, consumers' interpretations of them are also different, leading to different thinking modes and emotional reactions.

Additionally, from a grammatical perspective, the sentence patterns that promotions naturally present belong to "real conditional sentences," reflecting the causal and hypothetical relationships between promotional benefits and conditional restrictions. Such complex sentences generally present conditions in subordinate clauses and state the results of fulfilling conditions in main clauses (Huang & Li, 2016). When interpreting, individuals judge the possibility of obtaining results based on conditions (Epstude et al., 2016), or judge the necessity of participation based on result magnitude. Comparing the key language of large-scale online aggregated sales promotion, time, quantity, and purchase amount are condition-related language located in subordinate clauses; while massive discounts and prizes are result-related language located in main clauses. For research convenience, based on their corresponding "if" and "then" positions, the conditional part (conditional restrictions) is defined as "conditional promotional language," and the outcome part (material incentives) is defined as "incentive promotional language." In summary, since the two types of language occupy different positions in the entire sentence and have different grammatical divisions of labor, their roles in inducing emotions should also differ.

From a grammatical structure perspective, after various conditional restrictions and material incentives involved in large-scale online aggregated sales promotion are designed and combined, there are both sequential relationships and phenomena where arbitrarily changing the degree of both induces different promotional results in communication order. Therefore, the following research needs to be conducted on the internal connections between these two types of language and future-oriented emotions. First, since conditional restrictions are generally related to obtaining possibility, they may cause consumers to imagine urgency or snapping up contained in participation numbers, product quantities, promotion time, etc., and existing research has confirmed that changing conditional restrictions changes the intensity of pre-outcome emotions, it can be inferred that conditional key promotional language may more easily induce pre-outcome emotions related to possibility (Baumgartner et al., 2008). Second, since material incentives are mainly related to obtained benefits, they may induce consumers to imagine how much benefit or savings they will obtain, and existing research

has confirmed that changing the intensity of material incentives changes the intensity of anticipated emotions, it can be inferred that incentive key promotional language may more easily induce anticipated emotions related to opportunity costs (Bagozzi et al., 2016; Baumgartner et al., 2008). In summary, it can be inferred that conditional promotional language and incentive promotional language have specific divisions of labor in inducing future-oriented emotions.

3.4 Study 4: The Strengthening Mechanism of Auxiliary Promotional Language on Pre-Outcome and Anticipated Emotions

In the communication process of large-scale online aggregated sales promotion, words are often used to modify key promotional language or enhance atmosphere. For example, in modifying aggregation, one can use “site-wide” or specify “how many brands participate”; in modifying time limits, one can say “time-limited activity” or “flash sale activity”; in modifying discounts, one can write “discount” of how much or “reduce” of how much. Data crawling results show that large-scale online aggregated sales promotion tends to use provocative words like “grab now” and “immediate reduction.” Research shows that vocabulary helps activate corresponding contexts and helps people fully understand the experiential meaning of discourse (Han et al., 2019). In other words, although these words do not affect obtained benefits, they can create better atmosphere to a greater extent and have non-negligible effects on strengthening emotional experiences and improving purchase intentions.

According to the Linguistic Category Model (LCM), words can be divided into four categories: “descriptive action verbs,” “interpretive action verbs,” “state verbs,” and “adjectives” (Semin & Fiedler, 1991). Since each type of vocabulary represents different degrees of abstractness, and language processing automatically triggers human psychological reactions (Anderson, 2017; Solso et al., 2008), different types of vocabulary as important cues not only trigger different degrees of emotional and cognitive processing but also drive and attract attention (Semin & Fiedler, 1991). Accordingly, auxiliary promotional vocabulary may play a special emotional strengthening role in the online transaction process. Therefore, LCM can be used to explore the emotional arousal functions of different auxiliary promotional vocabulary and their strengthening effects on future-oriented emotions.

First, different vocabulary conveys different emotions or feelings (Semin & Fiedler, 1991). From the perspective of verbs, descriptive verbs like “reduce” and “immediately reduce” can better represent presence and can be inferred to be more effective than interpretive verbs like “discount,” better elevating future-oriented emotions in large-scale online aggregated sales promotion decisions. Second, since different auxiliary promotional languages have different emotional directionality, their impacts on pre-outcome and anticipated emotions also differ. For example, “grab now” expresses presence, while “regret to death” expresses result state. Therefore, it can be inferred that using auxiliary vocabulary with different directionality will have differential impacts on the intensity

of future-oriented emotions. Third, due to different degrees of abstractness in vocabulary (Hall, 2010), and higher abstractness leads to increased outcome uncertainty or reduced possibility of obtaining concrete objects, it can be inferred that abstract auxiliary language like “site-wide snap-up” and concrete language like “10,000 people snapping up” (numbers are examples only) will have different impacts on pre-outcome emotions. Additionally, more concrete vocabulary leads to more definite outcomes, so it can be inferred that auxiliary language like “all platform brand products simultaneously discounted” and “10,000 brands simultaneously discounted” (numbers are examples only) also have different impacts on anticipated emotions.

3.5 Study 5: The Influence Mechanism of Complex Discounts’ Surface and Deep Structures on Pre-Outcome and Anticipated Emotions

As a representative of site-wide promotions, large-scale online aggregated sales promotion widely uses complex discounts such as “threshold discount,” “threshold gift,” and “deposit counts as more.” Research shows that the actual discount calculation difficulty of such promotions exceeds most people’s imagination, being influenced by various factors including purchase amount, future coupon or deposit usage, and remaining balance (Lu & Wang, 2018). Although actual discount ranges can be calculated using inductive methods, for ordinary consumers, when facing such discounts, they often experience so-called discount illusions (cognitive biases) and unconsciously estimate actual discounts as X% off. The most commonly used explanation for this phenomenon is anchoring effect, but upon closer analysis, the above explanation still has room for improvement.

In fact, from a sentence pattern perspective, complex discounts like “threshold discount” have their particularities in language design. Unlike general promotions that require association to think of conditional clauses, such promotions themselves are compressed conditional clauses belonging to implicit conditional sentences, which are important for exploring the influence of sentence structures formed by large-scale online aggregated sales promotion. Solso et al. (2008) point out that although the deep meaning of a sentence pattern may be consistent, different surface meanings often lead to inconsistent cognition, meaning that sentence meanings determined by deep structure do not change, but people are more likely to be influenced by sentence surface structure. Corresponding to threshold discounts and threshold gifts, people are accustomed to processing the surface structure presented by language while ignoring its deep meaning (Carroll, 2007), which also leads to consumers’ insufficient cognition of the true discount degree of such promotions. Therefore, it is necessary to explore the influence mechanism of surface and deep structure cognition of conditional clauses on discount illusions and future-oriented emotions using threshold discounts and similar tools. To a large extent, the above exploration provides new ideas for revealing the mechanism of framing effect formation.

Here, taking “threshold discount” as an example to elaborate on research ques-

tions. First, from a surface structure perspective, “threshold discount” means “buy up to X...then reduce Y...” As an implicit conditional sentence, it omits specific conjunctions. From a deep structure perspective, it contains the meaning of “if you buy up to X...then you reduce Y...” Since this meaning easily stimulates consumers’ imagination about conditions and benefits, it can be inferred that after fully presenting the threshold discount conditional clause, discount illusions and the intensity of future-oriented emotions will be reduced. Second, if further prompted with deep structures such as “if you don’t buy up to X...then there is no reduction...” and “if consumption amount exceeds the threshold but doesn’t reach the next reduction condition...then you can only reduce according to the reached portion...”, illusions and emotional intensity will be further reduced. Third, since the external anchor presented by complex discounts like “spend 200, reduce 100” easily anchors the basis for estimation, it can be inferred that consumers will use the two data points given by the surface structure for estimation; moreover, when the external anchor becomes precise numbers, such as “spend 199, immediately reduce 99,” increased calculation difficulty leads to more estimation biases, and it can be inferred that its impact on discount illusions and emotions is not significantly different from the impact of “50% discount.”

3.6 Study 6: The Influence Mechanism of Large-Scale Online Aggregated Sales Promotion’s Key Promotional Language Combinations on Future-Oriented Emotions

Large-scale online aggregated sales promotion gathers multiple inducements, characterized by the simultaneous use of various restriction conditions and material incentives, thereby forming a unique promotional context. Literature review shows that context level influences language selection. For example, in low-context situations, people prefer to use concrete and clear language; conversely, in high-context situations, language information is implicitly unclear, specific communication relies on external environment and internalized values and norms, and language use can be more abstract (Hall, 2010). Given that the internet is a low-context existence, it is necessary to study the impact of language style in such contexts.

Additionally, literature review shows that when key promotional languages such as time limits and discounts are used alone, the intensity of emotions they induce is limited. From the practice of large-scale online aggregated sales promotion, the purpose of combining multiple promotional inducements is to maximize consumer participation enthusiasm. However, from the perspective of cue utility theory and research results on cue dominance (Lazarus, 1991; Li, 2016; Yang & Zhang, 2009), once language cues appear densely, cognitive miserliness is easily activated, and people’s evaluation of specific matters will shift to evaluation of highly diagnostic cues (Corcoran & Mussweiler, 2010; Lu & Hu, 2018). That is, the effect of combining multiple key promotional languages may be regulated by cognitive miserliness. Specifically, the following assumptions can be made.

First, in low-context conditions such as the internet where language is the main communication medium, it can be inferred that concrete promotional discourse like “2,000 brands, 50,000 hot items! All items 50% off” will have better effects on future-oriented emotions than abstract discourse like “thousands of products, countless discounts.” Second, when time limits, quantity limits, and purchase thresholds are combined, due to the influence of cognitive miserliness (Lu & Hu, 2018) and “equate-to-differentiate” decision models (Li, 2016), it can be assumed that the impact of multiple combinations on pre-outcome emotion intensity will not significantly improve. Third, when discounts, gifts, and coupons are combined, such as “lowest price 50% off, plus get gifts or coupons for 1 yuan more,” it can similarly be assumed that the impact of multiple combinations on anticipated emotion intensity will not significantly improve. In summary, after combining multiple key promotional languages, emotional intensity will experience “marginal diminishing” due to cognitive miserliness, ultimately leaving only a vague impression of “especially favorable prices” in consumers’ minds regarding large-scale online aggregated sales promotion.

4. Theory Construction and Innovation

The role of promotional communication is increasingly prominent. Compared with general promotions, large-scale online aggregated sales promotion shows more interactivity with consumers, indicating that promotional communication creativity and language design have become important aspects of marketing practice. Although classic marketing works have long regarded promotion as an integrated marketing communication tool (Belch & Belch, 2014), and numerous studies have found that different language presentation methods (promotional framing effects) can influence promotional effectiveness (Mandel, 2014), compared with advertising that has systematic creativity and communication systems, existing promotional research only focuses on the combination, specific scale, and presentation differences of the two key components of conditional restrictions and material incentives. This defect also prevents existing promotional decision theory from comprehensively revealing how large-scale online aggregated sales promotion, which is extremely exhaustive in inducement combinations and highly provocative in language communication, uses language to leverage consumer emotions and achieve good sales results. To a large extent, although existing research has discovered verbal embellishment effects in promotional decisions (Tversky & Kahneman, 1981), as well as imaginations about future consumption induced by time limits and material incentives, leading to emotions such as regret from not buying, anxiety, hope, anticipated regret, and anticipated delight (Lu et al., 2021), these studies have not deeply explored issues such as “the role of promotional language, the impact of promotional language on consumers’ thinking patterns and future-oriented emotions, the division of labor of different promotional languages in inducing and strengthening future-oriented emotions,” and have failed to place promotional language, promotional inducements, and emotion generation in promotional decisions under the same premise for systematic theoretical thinking. Based on this, this

research, based on psycholinguistics and closely focusing on promotional conditional clauses and the communication cases and language design characteristics of large-scale online aggregated sales promotion, studies the language psychological mechanisms of future-oriented emotion generation in such contexts, aiming to systematically improve promotional decision emotion theory while summarizing the psycholinguistic foundation for promotional communication and creative design.

First, by clarifying the cognitive antecedents of future-oriented emotion generation and the dominance mechanism of positive emotions in large-scale online aggregated sales promotion decisions, this research systematically reveals the mechanism of promotional conditional clauses in influencing consumers' thinking patterns, emotional evaluations, and emotion generation. In comparison, existing research mainly reveals the connection between conditional restrictions and material incentives and specific emotions based on their information characteristics, while this research conducts a holistic exploration of the impact of large-scale online aggregated sales promotion on future-oriented emotions based on the conditional clauses presented by promotional language, which is not only more comprehensive but also more profound. First, combined with the psychological effects of sentence patterns and grammar, the conditional clauses presented by promotions are highly similar to the prefactual thinking process, naturally causing people to make holistic associations or systematic thinking about conditional restrictions and material incentives in large-scale online aggregated sales promotion. This thinking not only concerns future consumption decisions and determines the goal-directed characteristics of decisions (Bagozzi et al., 2003) but also prepares cognitively for nurturing future-oriented emotions with future attributes (Baumgartner et al., 2008), providing a thought foundation for the generation of passion and carnival. Second, during the thinking process, consumers evaluate the self-relevance of promotions, the controllability and executability of conditional restrictions, and the realization and non-realization of anticipated benefits (Lazarus, 1991), and the results also determine the cognitive antecedents of the four future-oriented emotions: anxiety, hope, anticipated regret, and anticipated delight. In summary, compared with existing research that focuses more on the facts of emotion generation and their impacts, this study not only reveals the cognitive foundation of emotion generation but also finds theoretical basis for clarifying the language mechanisms through which promotions create emotions. Additionally, although promotions can induce prefactual thinking simulations such as "if I do (don't) do something, then I will (won't) get something," which has been confirmed by research on anticipated regret and time pressure (Inman & Mcalister, 1994; Liu et al., 2012), research on positive emotions such as hope and anticipated delight is obviously insufficient, leading to neglect of the sense of gain and hedonism brought by promotions, especially large-scale online aggregated sales promotion. From this perspective, this research' s thinking and dialectics on differences in prefactual thinking models also lay a foundation for exploring the cognitive antecedents and functions of different types of future-oriented emotions, especially positive

emotions. Finally, regardless of whether it is general promotion or large-scale online aggregated sales promotion, their language centrally displays conditional restrictions and material incentives. Therefore, from a sentence pattern perspective, what consumers first think of should be what they will get according to conditions, unless enterprises insist on emphasizing the opportunity cost of not acting. In summary, combined with the internal connection between upward/downward prefactual thinking and positive/negative emotions, and that upward prefactual thinking can stimulate positive result thinking and stronger motivation, large-scale online aggregated sales promotion decisions are more likely to induce positive rather than negative future-oriented emotions. To a large extent, the above research 构想 provides reasonable explanations for clarifying the phenomenon of positive emotion dominance, not only helping to reveal the emotional mechanism underlying the carnival characteristics of large-scale online aggregated sales promotion but also further correcting the problem of existing promotional decision research overemphasizing anticipated regret.

Second, by exploring the division of labor between conditional restrictions and material incentives in conditional clauses and the strengthening role of auxiliary promotional vocabulary in modifying the entire clause effect (promotional atmosphere), this research systematically clarifies the division of labor of key promotional language in inducing future-oriented emotions and the strengthening effect of auxiliary promotional language on future-oriented emotions, further revealing the correspondence between pre-outcome/anticipated emotions and key promotional language, as well as the influence mechanism of promotional language atmosphere construction on emotions. Overall, this research fundamentally subverts the traditional research 理念 of improving promotional effects by increasing benefits or changing conditions, providing new perspectives for designing ideal consumption emotions and comprehensively improving promotional effects. First, since decision-makers conduct overall decision-making based on the decision weights of different cues (Kim & Choi, 2012; Wang et al., 2016), and combined with research conclusions that language influences emotion perception and serves as a basis for event evaluation (Barrett et al., 2007; Liu et al., 2009), the importance of language has different impacts on emotions. Second, since different languages have clear directionality in content and requirements (Gu, 2019), leading to different cognitive evaluations and thus different emotions, it can be seen that conditional and incentive promotional language, as well as auxiliary promotional language, may all influence future-oriented emotions. Third, from the grammatical order of conditional clauses (Halliday & Hasan, 1989), conditional restrictions display the possibility of obtaining benefits, causing consumers to evaluate probability and uncertainty, which is highly consistent with the generation mechanism of pre-outcome emotions. Additionally, material incentives display the benefits obtained by fulfilling conditions, guiding consumers to evaluate obtained results and opportunity costs, which is highly consistent with the generation principle of anticipated emotions. The above analysis shows that the conditional restrictions and benefit design of large-scale online aggregated sales promotion may have specific divisions of labor in

inducing future-oriented emotions. To a large extent, this 构想 also advances previous emotion research, clarifying the relationship between different emotions and conditional clause structures. Finally, combined with the Linguistic Category Model's research on parts of speech and their functions (Semin & Fiedler, 1991), in large-scale online aggregated sales promotion copywriting, various words describing conditional restrictions and discount intensity differ in their ability to display promotional presence, urgency, and sense of gain. Although these words themselves do not change promotional conditions and benefits, they have different emotional orientations and differ in their ability to render emotions when transforming virtual scenes into more concrete scenes. Therefore, in online space, they can better enhance consumers' promotional experiences and gain more attention. This also indicates that auxiliary vocabulary like "grab now" and "immediate reduction" helps create atmosphere and strengthen the intensity of future-oriented emotions. To a large extent, research on auxiliary vocabulary lays a foundation for further constructing promotional communication and creative systems.

Third, by combining complex discounts like "threshold discounts" and the context and discourse formed by large-scale online aggregated sales promotion language, this research explores the role of conditional clause surface structure in framing consumer cognition and emotions, as well as the overall utility attenuation mechanism after combining multiple key promotional languages, further revealing the connection between psycholinguistic analysis processes and intuition heuristics and cognitive miserliness, thereby integrating existing research based on emotional evaluation induced by promotional decisions into the theoretical system of emotion evaluation. This also distinguishes this research from previous studies that used intuition heuristics to explain why promotions can lead to rapid decision-making (Lu & Hu, 2018) and provides deep explanations for why promotions can quickly induce "hot" emotional states. Combined with sentence structure research, under consistent deep structure or sentence connotation (Solso et al., 2008), a sentence can have multiple expression methods and thus construct various surface structures. From this perspective, differences in information presentation methods are actually differences in surface structure after language is combined into sentences, and the resulting "verbal embellishment effect" is essentially caused by being framed by surface structure (Tversky & Kahneman, 1981). Based on this, this research believes that the conditional clauses formed by large-scale online aggregated sales promotion have an important impact on future-oriented emotions in their presented surface structure. In fact, in such promotions, two scenarios provide specific ideas for exploring the influence of conditional clause structures. On one hand, based on the analysis and research of surface and deep structures of minimal conditional clauses like "threshold discount," the sentence reasons why such promotions easily cause "discount illusions" (Lu & Wang, 2018) can be further summarized. To a large extent, since site-wide promotions themselves are minimal conditional sentences, they easily induce consumers to think according to surface structure. Combined with theories of cognitive laziness and intuition heuristics, ignoring sentence

deep structure is both an inevitable result of cognitive miserliness and a concentrated manifestation of consumers' lack of depth in promotional decision-making. Overall, this research not only reveals the cognitive reasons why promotional tools like "threshold discount" are becoming increasingly popular but also reflects the psycholinguistic mechanism by which consumers are easily blinded by surface benefits while ignoring real conditional restrictions, advancing research on promotional framing effects (verbal embellishment effects) one step forward. On the other hand, based on the discourse context formed by the superposition of multiple key promotional languages, the psychological mechanisms of cognitive miserliness and intuition heuristics in regulating promotional language effects can be further revealed. Overall, when too many promotional inducements are superimposed, it easily causes consumers to over-focus on dominant inducements while ignoring the influence of other inducements, indicating that too many inducements cannot infinitely enhance the ability of large-scale online aggregated sales promotion to induce future-oriented emotions. Additionally, in online low-context environments, concrete and abstract discourse may lead to different effects (Hall, 2010). The above exploration shows that different key promotional inducements may have differential influence, and promotional activities need to be conducted in combination with specific environments. Only in this way can the communication and incentive effects of promotional language in different contexts be improved.

Compared with previous research, the theoretical contributions of this study are as follows:

First, it contributes to improving and enriching promotional and large-scale online aggregated sales promotion communication and decision-making theories. One, through innovative research on conditional clauses, it finds a psycholinguistic foundation for promotional communication and creative design, responding to existing research' s focus on conditional restrictions and material incentives, and through research on auxiliary promotional vocabulary, points out new ideas for improving the persuasiveness and appeal of promotional conditional clause frameworks, laying a foundation for exploring the creative power of language in creating and enhancing shopping pleasure. Two, through research on conditional clauses, key promotional vocabulary, and auxiliary promotional vocabulary, it masters the internal connection between emotional evaluation and prefactual thinking in promotional decisions (Bagozzi et al., 2003), clarifying the induction methods and basic functions of different future-oriented emotions. Research on cognitive antecedents, positive emotion dominance, and auxiliary vocabulary strengthening effects not only clarifies the generation mechanism of future-oriented emotions in large-scale online aggregated sales promotion decisions but also provides solid theoretical basis for creating these emotions. In the future, enterprises can induce emotions as needed. Three, through research on the innovation and combination application of multiple promotional inducements in large-scale online aggregated sales promotion (Lu et al., 2022; Raymen & Smith, 2016), it clarifies the overall impact of multiple key promotional languages, sentence structures, and discourse context on future-oriented emotions,

pointing out the role of cognitive miserliness and intuition heuristics in promotional decisions and the psycholinguistic environment on which they depend for survival. Overall, this research has the ability to integrate existing research findings into a unified system while creating conditions for online promotional theory construction.

Second, it contributes to improving anticipated regret and future-oriented emotion theory research. One, by combining future-oriented emotion research, it points out deficiencies in promotional decision emotion research, enriches research ideas on emotions in large-scale online aggregated sales promotion decisions, and clarifies the diversity of emotions in promotional decisions. Two, according to the connection between prefactual thinking, promotional language, and conditional clauses, it clarifies the relationship between anticipated regret and “missing better opportunities by not acting,” and based on the characteristics that event evaluations can coexist and the same prefactual thinking has both upward and downward forms, points out the cognitive principle that anticipated delight must occur and necessarily coexists with anticipated regret, thereby advancing anticipated regret research one step forward and providing an analytical framework for exploring the cognitive antecedents of the four future-oriented emotions. Three, it clarifies the generation mechanism of future-oriented emotions in decision frameworks with benefits and conditional restrictions. Due to the existence of benefits, although upward and downward prefactual thinking about benefits will coexist, the dominant status of upward thinking (Epstude et al., 2016) will cause anticipated delight to become a key force in inducing participation, which also provides a reasonable explanation for consumers’ mixed feelings of love and regret when participating in promotions. Additionally, combined with thinking about conditional restrictions in upward/downward prefactual thinking, it further analyzes the internal connection between pre-outcome emotion generation and possibility evaluation. Four, by using the connection between future-oriented thinking and future consumption, it reveals the universality of future-oriented emotions, which also occur in large-scale online aggregated sales promotion and are embedded in the shopping efforts induced by promotions.

Third, it contributes to expanding the Linguistic Category Model and psycholinguistics research fields. One, it introduces psycholinguistics into complex consumer behavior research, further mastering the role of language in consumer decision-making. Overall, conditional clauses have unique advantages in explaining the language mechanism of prefactual thinking induced by promotions, which is helpful for understanding cognitive modes before promotional decisions. Two, research on key and auxiliary vocabulary in large-scale online aggregated sales promotion can not only master the principles of commercial language creativity but also extend Linguistic Category Model research to more general “enterprise-consumer communication,” which is greatly beneficial for developing the Linguistic Category Model. Three, through research on the influence of context level on communication, it clarifies that online consumption situations belonging to “low context” rely more on concrete language expression

(Hall, 2010), mastering the correspondence between specific contexts and promotional language design. Four, through targeted research on sentence surface and deep structures, it deepens research on verbal embellishment effects in promotional decisions, clarifying differences in cognitive order caused by sentence structures (Kahneman, 2012; Li, 2016) and the psycholinguistic mechanism of cognitive laziness (Lu & Hu, 2018) in causing individual cognitive biases. Five, research on the “marginal diminishing effect” that occurs after combining multiple key promotional languages further points out the mediating role of intuitive decision-making and cognitive miserliness. In summary, this research finds a psycholinguistic path for promotional decision and consumer behavior research.

The expected research results of the theoretical model constructed by this study also have important practical value. First, it is of great help for improving retail promotional communication capabilities. One, for traditional retail enterprises, they should further enhance the ability of differentiated retail marketing from the perspective of creative design, especially the comprehensive use of promotional language. Two, for e-commerce platforms, according to the characteristics of online communication and language dissemination, they should reasonably set and specify the scale of promotional products, highlighting not only abstract elements like “massive products” and “super value discounts” but also clear language information about product types, quantities, and brands, making the presentation of promotional scale clearer and thereby inducing positive emotional evaluations. Three, large-scale online aggregated sales promotion should not only use conditional language cues like time limits, quantity limits, and threshold discounts to induce participation urgency but also comprehensively use benefit language like discounts to improve consumers’ value evaluation of promotional products. Moreover, it is necessary to use auxiliary vocabulary to create atmosphere and enhance consumers’ positive emotions and promotional sense of gain. Second, it helps government departments strengthen promotional supervision. Specifically, it should combine the problem that promotional language design can cause cognitive biases to conduct targeted supervision of promotional activities and language design, requiring enterprises to list all conditional restrictions while listing “purchase price” and “promotional price.” Third, it helps consumers make rational decisions. One, it can help them resist the temptation of promotional language, leave more time for decision-making, and avoid irrational consumption and “post-purchase regret.” Two, it can prompt them to think more about the deep structure of promotional clauses, master the true motives, conditions, and benefits of promotions, and prevent deception. Three, it helps them avoid making irrational decisions due to emotional excitement caused by large-scale online aggregated sales promotion advertising bombardment.

References

- Carroll, D. W. (2007). *Psychology of language* (Miao, X. et al., Trans.). Shanghai: East China Normal University Press.
- Hall, E. T. (2010). *Beyond culture* (He, D., Trans.). Beijing: Peking University

Press.

Kahneman, D. (2012). *Thinking, fast and slow* (Hu, X. et al., Trans.). Beijing: China CITIC Press.

Dou, W., & Hu, Q. (2018). The influence of language cues on spatial relationship representation and its mechanism. *Psychological Development and Education*, 34(5), 633-640.

Gu, J. (2019). Research on cross-cultural language information communication from the perspective of information ecology. *Information Science*, 37(2), 120-124.

Gu, J. (2011). On universal grammar theory in psycholinguistics. *Jiangxi Social Sciences*, 31(6), 204-207.

Han, X., Zhong, K., & Li, X. (2019). How does “wording” influence consumer behavior? A review of research on psycholinguistic effects in marketing communication. *Foreign Economics and Management*, 41(9), 91-108.

Hao, L., & Zeng, H. (2017). Research on the influence of time pressure and regulatory focus on promotional framing effects. *Journal of Industrial Engineering and Engineering Management*, 31(1), 32-38.

Huang, B., & Li, W. (2016). *Modern Chinese* (2nd ed.). Beijing: Peking University Press.

Ji, B., Liu, Y., & Chen, Y. (2017). Research overview of prefactual thinking. *China Journal of Health Psychology*, 25(7), 1112-1116.

Li, S. (2016). *Decision psychology: The equate-to-differentiate approach*. Shanghai: East China Normal University Press.

Liu, H., Li, A., Wang, H., & Wei, H. (2012). Research on the influence of different promotion methods on product purchase decisions: From the perspective of construal level theory. *Acta Psychologica Sinica*, 44(8), 1100-1113.

Liu, H., Hu, Z., & Peng, D. (2009). The interaction between emotion and language processing. *Advances in Psychological Science*, 17(4), 714-721.

Lu, C., Ke, W., & Zhuang, X. (2020). The induction mechanism of future-oriented emotions in large-scale online aggregated sales promotion decisions: The moderating role of time limits and quantity limits. *Nankai Business Review*, 23(5), 28-40.

Lu, C., & Li, H. (2018). Can truth and benefits coexist? The content model of promotion stereotypes and group perception differences. *Journal of Marketing Science*, 14(Z1), 21-48.

Lu, C., Peng, J., & Li, H. (2020). Future-oriented emotions induced by quantity-limited promotions and their mechanism. *Journal of Management Sciences in China*, 23(5), 102-126.

- Lu, C., & Wang, C. (2018). Do too many promotional products cause too many choice effects? The moderating role of time pressure. *Economic Management*, 40(3), 109-127.
- Lu, C., & Zhuang, X. (2018). Research on the phenomenon and operation model of aggregated promotion under the “new retail” background. *Fujian Tribune*, (9), 45-52.
- Solso, R. L., MacLin, K., & MacLin, O. H. (2008). *Cognitive psychology* (7th ed.) (Shao, Z. et al., Trans.). Shanghai: Shanghai People's Press.
- Belch, G. E., & Belch, M. A. (2014). *Advertising and promotion: An integrated marketing communications perspective* (Zheng, S. et al., Trans.). Beijing: China Renmin University Press.
- Ren, X. (2016). Observing “Double Eleven” online shopping consumption behavior from a communication studies perspective. *Editorial Friend*, (1), 98-103.
- Wei, X., Tu, R., & Zhou, Z. (2017). The impact of “quasi-loyalty program” failure on customer satisfaction. *Management Science*, 30(3), 110-121.
- Wu, Y., Peng, L., Yan, L., & Zhou, N. (2019). “Highbrow” or “lowbrow”? Consumer attitudes toward elegant and popular advertising language styles. *Nankai Business Review*, 22(1), 213-224.
- Yang, Y., & Zhang, X. (2009). A cognitive analysis model based on information cues. *Information Studies: Theory & Application*, 32(5), 9-12+43.
- Yuan, B., Huang, J., & Zeng, Y. (2013). The influence of online review language abstractness on consumer brand attitude and purchase intention: An empirical study based on the Linguistic Category Model (LCM). *Journal of Marketing Science*, 9(3), 17-30.
- Anderson, J. R. (2017). *Cognitive psychology and its implications* (7th ed.) (Qin, Y. et al., Trans.). Beijing: Posts & Telecom Press.
- Jin, L. (2008). A comparative study of promotional activity effects: The influence of inducement type, acquisition timing, and conditional restrictions on promotional effectiveness. *Management Review*, 20(8), 34-42+33.
- Zhu, H., Tu, R., Lin, Q., & Tu, B. (2009). Anticipatory thinking, self-regulatory orientation, and unplanned purchases. *Acta Psychologica Sinica*, 41(7), 649-658.
- Bagozzi, R. P., Belanche, D., Casaló, L. V., & Flavián, C. (2016). The role of anticipated emotions in purchase intentions. *Psychology & Marketing*, 33(8), 629-645.
- Bagozzi, R. P., Dholakia, U. M., & Basuroy, S. (2003). How effortful decisions get enacted: The motivating role of decision processes, desires, and anticipated emotions. *Journal of Behavioral Decision Making*, 16(4), 273-295.

- Barrett, L. F., Lindquist, K. A., & Gendron, M. (2007). Language as context for the perception of emotion. *Trends in Cognitive Sciences*, 11(8), 327–332.
- Baumgartner, H., Pieters, R., & Bagozzi, R. P. (2008). Future-oriented emotions: Conceptualization and behavioral effects. *European Journal of Social Psychology*, 38(4), 585–596.
- Bayraktar, A., Uslay, C., & Ndubisi, N. O. (2015). The role of mindfulness in response to product cues and marketing communications. *International Journal of Business Environment*, 7(4), 347–372.
- Chandon, P., Wansink, B., & Laurent, G. (2000). A benefit congruency framework of sales promotion effectiveness. *Journal of Marketing*, 64(4), 65–81.
- Corcoran, K., & Mussweiler, T. (2010). The cognitive miser's perspective: Social comparison as a heuristic in self-judgements. *European Review of Social Psychology*, 21(1), 1–29.
- Ding, Y., & Zhang, Y. (2020). Hiding gifts behind the veil of vouchers: On the effect of gift vouchers versus direct gifts in conditional promotions. *Journal of Marketing Research*, 57(4), 739–754.
- Epstude, K., Scholl, A., & Roese, N. J. (2016). Prefactual thoughts: Mental simulations about what might happen. *Review of General Psychology*, 20(1), 48–56.
- Greene, J. (1972). *Psycholinguistics: Chomsky and psychology*. Harmondsworth: Penguin.
- Halliday, K., & Hasan, R. (1989). *Language, context, and text: Aspects of language in a social semiotic perspective*. Oxford: Oxford University Press.
- Inman, J. J., & Mcalister, L. (1994). Do coupon expiration dates affect consumer behavior. *Journal of Marketing Research*, 31(3), 423–428.
- Kim, S., & Choi, S. M. (2012). Credibility cues in online shopping: An examination of corporate credibility, retailer reputation, and product review credibility. *International Journal of Internet Marketing and Advertising*, 7(3), 229–241.
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- Li, S., Sun, Y., & Wang, Y. (2007). 50% off or buy one get one free? Frame preference as a function of consumable nature in dairy products. *Journal of Social Psychology*, 147(4), 413–421.
- Loewenstein, G. F., Weber, E. U., & Hsee, C. K. (2001). Risk as feelings. *Psychological Bulletin*, 127(2), 267–286.
- Mandel, D. R. (2014). Do framing effects reveal irrational choice?. *Journal of Experimental Psychology: General*, 143(3), 1185–1198.

- Maule, A. J., Hockey, G. R. J., & Bdzola, L. (2000). Effects of time-pressure on decision-making under uncertainty: Changes in affective state and information processing strategy. *Acta Psychologica*, 104(3), 283-301.
- Peng, D., Hu, Z., Liu, H., Liu, C., & Ding, G. (2006). Neuro-cognitive mechanisms underlying the emotional modulation of word reading. *Chinese Science Bulletin*, 51(4), 377-384.
- Raymen, T., & Smith, O. (2016). What's deviance got to do with it? Black Friday sales, violence and hyper-conformity. *The British Journal of Criminology*, 56(2), 389-405.
- Reeve, J. (2008). *Understanding motivation and emotion*. New Jersey: John Wiley and Sons Incorporated.
- Sandberg, T., Hutter, R., Richetin, J., & Conner, M. (2016). Testing the role of action and inaction anticipated regret on intentions and behaviour. *British Journal of Social Psychology*, 55(3), 1-19.
- Semin, G. R., & Fiedler, K. (1991). The linguistic category model, its bases, applications and range. *European Review of Social Psychology*, 2(1), 1-30.
- Simonson, S. (1992). The influence of anticipating regret and responsibility on purchase decisions. *Journal of Consumer Research*, 19(1), 105-118.
- Swiley, E., & Goldsmith, R. E. (2013). Black Friday and Cyber Monday: Understanding consumer intentions on two major shopping days. *Journal of Retailing and Consumer Services*, 20(1), 43-50.
- Taylor, S. D., Bagozzi, R. P., & Gaither, C. A. (2005). Decision making and effort in the self-regulation of hypertension: Testing two competing theories. *British Journal of Health Psychology*, 10(4), 505-530.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211(4481), 453-458.
- Wang, Q., Cui, X., Huang, L., & Dai, Y. (2016). Seller reputation or product presentation? An empirical investigation from cue utilization perspective. *International Journal of Information Management*, 36(3), 271-283.

Note: Figure translations are in progress. See original paper for figures.

Source: ChinaXiv –Machine translation. Verify with original.