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Cognitive dissonance reduction in Weibo public opinion reversals: a corpus-based comparative content analysis of education, consumer affairs, and entertainment cases

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Abstract. Online public opinion reversals expose users to information that conflicts with previously expressed judgments, creating conditions for cognitive dissonance. Yet little is known about how users reduce such dissonance across issue contexts. This study used theory-driven quantitative content analysis to compare reduction strategies in three selected Sina Weibo reversal events concerning education, consumer affairs, and entertainment. A corpus of 990 eligible first-level comments, with 330 comments from each event, was coded into seven mutually exclusive strategies grouped as disengaging or engaging responses. Frequencies, Pearson chi-square tests, adjusted standardized residuals, Cramér's V, and Holm-adjusted pairwise comparisons were employed. Across the corpus, act rationalization/reformulation was the most frequent strategy (48.28%), followed by quick defense/source disparagement (37.47%), while attitude change was absent. Strategy distributions differed significantly across cases at both the superordinate-category level, $\chi^2(2, N = 990) = 362.782$, $p < .001$, Cramér's $V = .605$, and the four focal-strategy level, $\chi^2(6, N = 980) = 593.138$, $p < .001$, Cramér's $V = .550$. The education case showed a near balance between engaging and disengaging responses and comparatively frequent trivialization. The consumer-affairs case was dominated by engaging responses, especially act rationalization/reformulation, whereas the entertainment case was dominated by disengaging responses, particularly quick defense/source disparagement. These findings indicate that publicly expressed dissonance-reduction strategies vary across selected events and may be shaped by their practical relevance, identity involvement, and discursive structure. The study extends cognitive dissonance research by demonstrating how online reduction strategies differ across issue contexts.

Keywords: cognitive dissonance, public opinion reversal, Sina Weibo, content analysis, social media

1. Introduction

Social media have accelerated the formation, circulation, and revision of public judgments. On Sina Weibo, early interpretations of an event can become widely visible before the available evidence has stabilized, and users may publicly endorse those interpretations through comments, reposts, or evaluations. Online public opinion reversal occurs when later information, an official clarification, or a counter-narrative substantially challenges an earlier dominant account. Such reversals do more than change the informational environment:

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they confront users with a discrepancy between a previously expressed judgment and a later version of events, while leaving the earlier judgment visible to other participants.

Cognitive dissonance theory provides a useful framework for understanding this situation. Festinger [1] proposed that inconsistency among cognitions, or between beliefs and behavior, produces an aversive psychological state that motivates efforts to restore consistency. Subsequent work has emphasized that the pressure to reduce dissonance is especially strong when the inconsistency implicates the self-concept [2], and that reduction strategies can also be understood as ways of regulating negative emotions such as anxiety, shame, anger, or guilt [3]. In social media settings, however, dissonance is managed under conditions of publicity and persistence. A response may therefore serve not only to reduce internal discomfort but also to preserve credibility, identity, and continuity with a position that has already been recorded in public.

Existing studies indicate that corrective or contradictory information can alter online participation and expression. Bai et al. [4] found marked changes in users' posting patterns following a Weibo public opinion reversal. Sengupta et al. [5] documented a shift from negative attacks to strong positive support after allegations against a social media influencer were shown to be false, interpreting this reversal as a compensatory response to an earlier misjudgment. Related research has shown that exposure to opposing views can produce psychological displeasure [6], while perceived disagreement with a prevailing opinion can affect whether users speak, remain silent, or adjust their expressed position [7]. Together, these findings establish that online reversals can generate consequential cognitive, emotional, and behavioral responses.

Nevertheless, two gaps remain. First, prior work has often isolated a single outcome, such as posting frequency or sentiment, or has relied on experimental and simulated settings. It therefore offers limited evidence about the range of dissonance-reduction strategies expressed in naturally occurring comments. Second, few studies have compared how these strategies are distributed across events with different practical, moral, and identity stakes. Education, consumer-affairs, and entertainment controversies may invite different forms of public involvement, but a comparison of one event from each area can demonstrate only cross-case variation, not stable effects of the domains themselves.

To address these gaps, the present study conducts a theory-driven quantitative content analysis of 990 eligible first-level comments posted in response to three selected Weibo public opinion reversal events concerning education, consumer affairs, and entertainment. It identifies seven dissonance-reduction strategies, compares their overall distribution, and tests whether the strategy profiles differ across the three cases at both the superordinate-category and specific-strategy levels. By focusing on public expressions in natural comment data, the study extends cognitive dissonance research from the existence of online conflict to the discursive routes through which users publicly manage it. The study asks the following questions:

RQ1. What patterns characterize the overall distribution of cognitive dissonance reduction strategies across the three selected Weibo public opinion reversal events?

RQ2. How do the distributions of cognitive dissonance reduction strategies differ across the three events at the superordinate-category and specific-strategy levels?

2. Literature review

2.1. Cognitive dissonance theory and its reduction strategies

Cognitive dissonance theory, introduced by Festinger [1], remains one of the most influential accounts of attitude change and behavioral adjustment in social psychology. The theory proposes that inconsistency among cognitions, or between beliefs and behavior, produces an aversive state of psychological tension. Because this

state is uncomfortable, individuals are motivated to reduce the inconsistency and restore a workable sense of coherence.

Research on dissonance reduction has identified several routes through which this restoration may occur, including attitude change, behavioral change, rationalization, and trivialization [1, 2]. Attitude change entails revising an existing belief so that it is more consistent with one's behavior or with newly available evidence. Behavioral change removes the inconsistency by altering the conduct itself. Rationalization preserves the original position by qualifying, reinterpreting, or justifying it. Trivialization reduces the psychological weight of the conflict by treating the disputed issue as unimportant. These strategies are not necessarily mutually exclusive at the psychological level. Cancino-Montecinos et al. [3], for example, found that attitude change and trivialization frequently co-occurred across the experimental literature.

More recent work has recast dissonance reduction as a form of emotion regulation. On this view, dissonance is not only a cognitive discrepancy but also an affective episode that may involve anxiety, anger, shame, or guilt. Reduction strategies help individuals regulate these emotions by changing the belief, changing its meaning, or limiting exposure to the source of discomfort [3]. This perspective is especially relevant to social media, where dissonant information is encountered publicly and users' responses are visible to others. Online expressions may therefore serve two functions at once: they manage internal inconsistency and present a defensible public position.

2.2. Cognitive dissonance in online public opinion reversal

Online public opinion reversal refers to a marked shift in the dominant interpretation of an event after new information, a correction, or a counter-narrative emerges. The conflict between an earlier judgment and a later account creates a setting in which cognitive dissonance is likely to occur. Unlike routine disagreement, reversal events are sudden, public, and often highly contested. Users may have already endorsed a position before the later information appears, which raises both the psychological cost of revision and the reputational cost of admitting error.

Empirical studies have reported patterns consistent with cognitive dissonance in reversal contexts. Bai et al. [4] examined a reversal event on Sina Weibo and compared users' posting behavior before and after the correction. Among users who remained active after the reversal, the distribution of posting frequency no longer followed the same pattern observed earlier; many highly active users also entered the discussion only after the reversal. These behavioral shifts suggest that corrective information altered subsequent participation rather than simply ending the debate. Sengupta et al. [5] documented a related pattern in an influencer controversy. After allegations against an influencer were shown to be false, followers' comments shifted from negative attacks to strong positive support. The authors conceptualized this sentiment reversal as a compensatory response through which followers attempted to manage the discomfort associated with their earlier judgment.

Other studies have clarified how online environments can trigger or intensify such conflict. Jeong et al. [6] found that exposure to views that contradicted users' own positions increased perceived heterogeneity and psychological displeasure. In a public opinion reversal, the discrepancy is especially salient because later information challenges a judgment that may already have been stated in public. At the group level, Yao et al. [7] showed through an opinion-diffusion model that perceived disagreement with a prevailing opinion can alter whether individuals speak, remain silent, or adjust their expressed position. Together, these studies indicate that dissonant information can affect both the content of expression and the decision to participate.

Taken together, existing studies show that contradictory or corrective information can change online participation, emotion, and expression. They do not yet provide a systematic account of the discursive

strategies through which users reduce dissonance in naturally occurring comment data, nor do they establish whether similar strategy profiles appear across events with different practical and identity stakes. These unresolved issues provide the basis for the comparative design described below.

3. Method

3.1. Research design

This study used quantitative content analysis to examine cognitive dissonance reduction strategies in naturally occurring Sina Weibo comments. The individual first-level comment was the unit of analysis, and each eligible comment received one mutually exclusive strategy code. Public opinion reversal was defined as a process in which later information or an explicit counter-narrative materially challenged an earlier dominant interpretation. The three cases were analyzed as selected domain-specific events rather than as representative samples of all education, consumer-affairs, and entertainment controversies.

3.2. Case selection and research contexts

The cases occurred between 2025 and 2026 and were selected because each attracted substantial public attention, developed an identifiable initial interpretation, and subsequently generated new information or a counter-narrative that challenged that interpretation. They also represented three distinct issue contexts and provided sufficient publicly accessible first-level comments for analysis. Table 1 summarizes the cases, the relevant reversal or counter-narrative points, and the final comment corpus.

Table 1. Overview of the selected cases and comment corpus

Case	Domain	Period	Reversal or Counter-Narrative Point	Posts	Final Comments
Xiamen teacher umbrella incident	Education	May 2026	Clarification identified the man as a retired rehired teacher rather than a school leader; the education authority also denied that the two were father and daughter.	3	330
Xibei pre-prepared food controversy	Consumer affairs	September 2025	The dispute shifted from categorical denial toward production transparency, consumer expectations, and announced changes to on-site preparation.	1	330
Zhao Lusi–Galaxy Cool Entertainment dispute	Entertainment	August 2025	The company's denial and Zhao's public rebuttal introduced competing accounts of the contractual and financial dispute.	1	330

3.3. Data collection and corpus construction

Publicly accessible first-level comments were collected from five high-engagement Weibo posts using Octoparse: three posts for the education case and one post for each of the other two cases. Replies to comments were excluded. User IDs were retained temporarily to remove duplicate contributors, so that only one comment per user was included within each case.

The corpus was cleaned by removing advertisements, duplicate content, emoji-only entries, meaningless character strings, off-topic comments, and comments in which no identifiable dissonance-reduction strategy could be established. After cleaning, 330 eligible comments remained for each case, and all were retained. The final corpus therefore comprised 990 comments that displayed an identifiable dissonance-reduction strategy.

3.4. Development of the coding framework

The theory-driven coding framework was developed by synthesizing and adapting prior research on cognitive dissonance reduction in general and online settings [3, 8-11]. It distinguished between disengaging strategies, which reduce discomfort without directly integrating conflicting information, and engaging strategies, which accommodate, reinterpret, or move beyond the conflict. The final framework contained seven mutually exclusive codes, presented in Table 2. When more than one strategy appeared plausible, coders selected the code representing the comment's dominant discursive function.

Table 2. Coding framework for cognitive dissonance reduction strategies

Superordinate Category	Code and Strategy	Operational Definition	Illustrative Example
Disengaging	A. Quick defense/source disparagement	Rejects the credibility, motives, or competence of the source without engaging substantively with the conflicting information.	"That account is paid to manipulate the story; its claims are not credible."
	B. Legitimization of opposing views	Accepts an opposing view as reasonable but attributes it to differences in background, experience, or perspective rather than revising one's own judgment.	"People see the issue differently because they stand in different positions."
	C. Trivialization	Reduces the personal importance or moral weight of the disputed issue or information.	"It is only an online controversy; it is not worth taking so seriously."
	D. Ignoring/ avoidance/distraction	Avoids the central contradiction, shifts attention elsewhere, or signals withdrawal from the discussion.	"Let us stop talking about this and discuss something else."
Engaging	E. Attitude change	Acknowledges that an earlier judgment was mistaken and accepts the new information or position.	"The evidence shows that I misunderstood the situation, so I withdraw my earlier claim."
	F. Act rationalization/ reformulation	Qualifies, narrows, or reinterprets an earlier position so that it remains partly compatible with the new information.	"I said it was possible, not that it was definitely true."
	G. Transcendence	Moves beyond the immediate right-or-wrong dispute by interpreting the event through a broader social, institutional, or moral issue.	"The larger problem is how easily online discussion can be manipulated."

3.5. Coding procedure and intercoder reliability

Two trained undergraduate research assistants served as coders. Before formal coding, they completed three pilot rounds, each using a new set of 100 comments. The coders worked independently and discussed disagreements after each round; these discussions were used to refine category boundaries and decision rules. The final pilot round yielded 80% simple agreement and Cohen's κ = .63, indicating acceptable agreement. The finalized corpus was then divided equally between the two coders for independent coding.

3.6. Statistical analysis

Analyses were conducted using IBM SPSS Statistics for Windows, Version 32.0 [12]. Frequencies and percentages were calculated for all seven strategies. A 3 × 2 Pearson chi-square test compared the three cases across disengaging and engaging strategies. A direct 3 × 7 test was not conducted because attitude change did not occur and legitimization and avoidance were rare. The specific-strategy analysis therefore focused on A, C, F, and G in a 3 × 4 Pearson chi-square test. Cramér's V was reported as the effect size, and adjusted standardized residuals were examined using $|z| > 1.96$ as the criterion for notable cell deviations. Pairwise comparisons of the four focal strategy proportions used Holm-adjusted p values. All tests were two-tailed with $\alpha = .05$.

3.7. Ethical considerations

All comments were drawn from publicly accessible Weibo posts. The researchers did not interact with users or access private information. Usernames, user IDs, profile links, and other identifying information were excluded from the manuscript, and any illustrative comments were anonymized before reporting.

4. Results

4.1. Overall distribution of dissonance reduction strategies

The final corpus contained 990 eligible comments, with 330 comments from each event. Table 3 presents the complete distribution of the seven specific strategies.

Table 3. Frequencies and percentages of the seven specific strategies

Strategy	Education *n* (%)	Consumer Affairs *n* (%)	Entertainment *n* (%)	Total *n* (%)
A. Quick defense/source disparagement	81 (24.55)	18 (5.45)	272 (82.42)	371 (37.47)
B. Legitimization of opposing views	1 (0.30)	3 (0.91)	2 (0.61)	6 (0.61)
C. Trivialization	83 (25.15)	11 (3.33)	0 (0.00)	94 (9.49)
D. Ignoring/avoidance/distraction	2 (0.61)	0 (0.00)	2 (0.61)	4 (0.40)
E. Attitude change	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
F. Act rationalization/reformulation	146 (44.24)	283 (85.76)	49 (14.85)	478 (48.28)
G. Transcendence	17 (5.15)	15 (4.55)	5 (1.52)	37 (3.74)
Total	330 (100.00)	330 (100.00)	330 (100.00)	990 (100.00)

Note. Percentages in the three case columns are based on n = 330. Total percentages are based on N = 990.

Act rationalization/reformulation (F) was the most frequent strategy, accounting for 478 comments (48.28%). Quick defense/source disparagement (A) was the second most frequent, with 371 comments (37.47%). Together, A and F represented 85.76% of the eligible corpus. Trivialization (C) accounted for 9.49%, and transcendence (G) for 3.74%. Legitimization (B) and avoidance (D) were rare, while attitude change (E) did not occur in any of the three cases.

4.2. Differences in superordinate strategy categories

Table 4 reports the distribution of disengaging and engaging strategies and the adjusted standardized residuals for each case.

Table 4. Superordinate strategy categories by case

Case	Disengaging n (%)	Engaging n (%)	Adjusted Residual: Disengaging	Adjusted Residual: Engaging
Education	167 (50.61)	163 (49.39)	1.170	−1.170
Consumer affairs	32 (9.70)	298 (90.30)	−17.049	17.049
Entertainment	276 (83.64)	54 (16.36)	15.879	−15.879
Total	475 (47.98)	515 (52.02)	—	—

Note. Pearson $\chi^2(2, N = 990) = 362.782$, $p < .001$, Cramér's $V = .605$. The minimum expected count was 158.33. Adjusted residuals with $|z| > 1.96$ indicate a significant departure from the expected frequency.

The association between case and superordinate strategy category was statistically significant, $\chi^2(2, N = 990) = 362.782$, $p < .001$, Cramér's $V = .605$. The education case was nearly evenly divided between disengaging (50.61%) and engaging (49.39%) strategies, and neither residual reached the 1.96 threshold. The consumer-affairs case was dominated by engaging strategies (90.30%), which occurred more often than expected, whereas disengaging strategies occurred less often than expected. The entertainment case showed the reverse pattern: disengaging strategies accounted for 83.64% of comments and occurred more often than expected, while engaging strategies were less frequent than expected.

4.3. Differences in core specific strategies

Because E was absent and B and D were sparse, the inferential comparison of specific strategies focused on A, C, F, and G. Table 5 reports their case-level frequencies, full-case percentages, and adjusted standardized residuals.

The distribution of the four core strategies differed significantly across the three cases, $\chi^2(6, N = 980) = 593.138$, $p < .001$, Cramér's $V = .550$. In the education case, trivialization (C) occurred more often than expected, whereas quick defense/source disparagement (A) occurred less often than expected. In the consumer-affairs case, act rationalization/reformulation (F) occurred more often than expected; A and C were both below expectation. In the entertainment case, A occurred substantially more often than expected, while C, F, and G all occurred less often than expected. The residuals for education F and G and consumer-affairs G did not exceed the 1.96 threshold.

Table 5. Core specific strategies by case

Case	Strategy	n	% of Case	Adjusted Residual
Education	A. Quick defense/source disparagement	81	24.55	−5.977
Education	C. Trivialization	83	25.15	11.879
Education	F. Act rationalization/reformulation	146	44.24	−1.829
Education	G. Transcendence	17	5.15	1.654
Consumer affairs	A. Quick defense/source disparagement	18	5.45	−14.776
Consumer affairs	C. Trivialization	11	3.33	−4.685
Consumer affairs	F. Act rationalization/reformulation	283	85.76	16.739
Consumer affairs	G. Transcendence	15	4.55	0.943
Entertainment	A. Quick defense/source disparagement	272	82.42	20.769
Entertainment	C. Trivialization	0	0.00	−7.199
Entertainment	F. Act rationalization/reformulation	49	14.85	−14.921
Entertainment	G. Transcendence	5	1.52	−2.600

4.4. Pairwise comparisons

Holm-adjusted pairwise tests were used to determine which cases differed for each core strategy. The results are shown in Table 6.

Table 6. Holm-adjusted pairwise comparisons of core strategy proportions

Strategy	Comparison	Case 1 %	Case 2 %	z	Holm-Adjusted p
A	Education vs. consumer affairs	24.55	5.45	6.868	< .001
A	Education vs. entertainment	24.55	82.42	−14.906	< .001
A	Consumer affairs vs. entertainment	5.45	82.42	−19.921	< .001
C	Education vs. consumer affairs	25.15	3.33	8.019	< .001
C	Education vs. entertainment	25.15	0.00	9.744	< .001
C	Consumer affairs vs. entertainment	3.33	0.00	3.345	< .001
F	Education vs. consumer affairs	44.24	85.76	−11.180	< .001
F	Education vs. entertainment	44.24	14.85	8.276	< .001
F	Consumer affairs vs. entertainment	85.76	14.85	18.217	< .001
G	Education vs. consumer affairs	5.15	4.55	0.362	.717
G	Education vs. entertainment	5.15	1.52	2.602	.028
G	Consumer affairs vs. entertainment	4.55	1.52	2.271	.046

Note. Each comparison used n = 330 per case. Holm's procedure adjusted the three pairwise p values within each strategy.

All pairwise differences for A, C, and F remained significant after Holm adjustment. Quick defense/source disparagement followed the order entertainment > education > consumer affairs. Trivialization followed education > consumer affairs > entertainment, whereas act rationalization/reformulation followed consumer affairs > education > entertainment. For transcendence, education and consumer affairs did not differ significantly. Both, however, showed higher proportions than entertainment after adjustment.

5. Discussion

5.1. Overall distribution of cognitive dissonance reduction strategies

The present study examined how cognitive dissonance was discursively reduced in three selected Weibo public opinion reversal events. Across the corpus, act rationalization/reformulation was the most frequent strategy, followed by quick defense/source disparagement. Together, these two strategies accounted for the large majority of the coded comments. By contrast, legitimization of opposing views and avoidance were rare, and no comment was coded as attitude change. Overall, users were more likely to preserve or defend an earlier position than to acknowledge explicitly that their initial judgment had been incorrect.

This pattern is consistent with the central proposition of cognitive dissonance theory that individuals are motivated to restore consistency, but do not necessarily do so by changing their attitudes. When abandoning an existing judgment is psychologically costly, individuals may instead reinterpret conflicting information or defend the credibility of their original cognition [1]. This tendency may be particularly strong when a prior judgment is connected to an individual's self-concept, because conceding that the judgment was mistaken can threaten a sense of personal consistency [2]. From an emotion-regulation perspective, rationalization and source disparagement can also reduce the negative emotions produced by inconsistency without requiring individuals to replace their original position entirely [3].

The absence of attitude change is especially noteworthy. Traditional accounts of cognitive dissonance often regard attitude revision as one possible route through which inconsistency is resolved. However, the public and persistent nature of social media expression may make this route comparatively costly. A Weibo comment is not only a response to information but also a publicly observable record of the user's position. Once a stance has been expressed, openly reversing it may create concerns about credibility, self-presentation, and social evaluation. Although admitting an error can improve how others evaluate an individual, users may nevertheless be reluctant to make such admissions in public settings [13].

The findings therefore suggest that publicly expressed dissonance reduction involves both internal consistency and external self-presentation. Users may reinterpret new information not only to alleviate psychological discomfort but also to maintain a defensible public position. This interpretation is compatible with previous research showing that exposure to contradictory online information produces psychological displeasure and encourages users to adopt coping strategies that protect existing beliefs or information environments [6, 11]. In the three cases examined here, public opinion reversal rarely produced explicit acknowledgment of error. Instead, it more often generated discursive adjustments through which earlier judgments could be maintained, qualified, or defended.

5.2. Cross-case differences in superordinate strategies

The distributions of engaging and disengaging strategies differed substantially across the three cases. The education case was almost evenly divided between the two superordinate categories. The consumer-affairs case was dominated by engaging strategies, whereas the entertainment case was dominated by disengaging strategies. These differences indicate that dissonance-reduction strategies were not distributed uniformly across the selected public opinion reversals.

A possible explanation is that the three cases involved different forms of psychological threat. Social identity theory proposes that individuals interpret information partly through their group memberships and are motivated to protect positively valued social identities [14]. When contradictory information is perceived as a threat to an in-group, users may respond defensively rather than integrate the information into their existing

understanding. Social media can reinforce this tendency by making group boundaries and "us versus them" distinctions more salient [15].

The entertainment case appeared to involve the strongest identity alignment, as discussion was organized around competing accounts offered by a celebrity and her agency. The consumer-affairs case, in contrast, was more directly connected to practical judgments concerning price, product preparation, and consumer trust. Users therefore had stronger reasons to engage with the conflicting information and reconstruct an intelligible account of the controversy. The education case occupied an intermediate position: it attracted moral and institutional evaluation, but the event was neither as directly connected to most users' material interests as the consumer-affairs case nor as strongly organized around fan-group identity as the entertainment case.

These interpretations should not be taken to mean that education, consumer-affairs, and entertainment events invariably produce different psychological responses. Because only one event was examined in each domain, the findings demonstrate case-level variation rather than stable domain effects. Nevertheless, they extend previous research suggesting that users' responses to contradictory social media information depend on the context in which the conflict occurs [6]. In the present corpus, practical relevance was associated with greater engagement with conflicting information, whereas stronger identity alignment was associated with defensive disengagement.

5.3. Trivialization in the education case

Trivialization was substantially more frequent in the education case than in the other two cases. Rather than directly accepting or rejecting the clarification, many users reduced the importance of the controversy by describing it as an insignificant incident, an exaggerated online dispute, or an issue unworthy of further attention.

Trivialization offers a comparatively low-cost route to cognitive consistency. If an inconsistency cannot easily be resolved, its psychological effect can be reduced by lowering the importance attached to the conflicting cognition [1]. This strategy may be particularly attractive when the issue is not closely connected to an individual's central values or immediate interests, because redefining the event as unimportant requires less adjustment than revising a previously expressed judgment [2]. It can also regulate the emotional discomfort associated with dissonance by decreasing the perceived significance of the conflict rather than resolving the contradiction itself [3].

The specific nature of the education case may have made this strategy comparatively accessible. The controversy initially centered on the identity and relationship of the individuals involved in an umbrella-holding incident. Once clarification was released, the event had limited direct consequences for most users. It also lacked the clear material implications present in the consumer-affairs case and the strong camp-based alignment visible in the entertainment case. Users could therefore restore consistency by reframing the incident as a minor matter that had been disproportionately amplified online.

This interpretation also helps explain why trivialization was uncommon in the other cases. In the consumer-affairs case, questions concerning product preparation, price, and trust were difficult to dismiss because they could influence future consumption decisions. In the entertainment case, the dispute had symbolic importance for users aligned with the celebrity or the agency, making disengagement more likely to take the form of source disparagement than a claim that the issue was unimportant. Thus, in the present study, trivialization appeared most frequently where both practical involvement and identity involvement were comparatively limited.

5.4. Act rationalization/reformulation in the consumer-affairs case

Act rationalization/reformulation was overwhelmingly dominant in the consumer-affairs case. Users typically did not reject the emerging information outright. Instead, they qualified earlier claims, revised the criteria by which the controversy should be evaluated, or reconstructed the relationship between the restaurant's previous statements and its later response.

The practical relevance of consumer-affairs issues may partly explain this pattern. When an issue is connected to an individual's material interests, future decisions, or desired outcomes, information tends to receive more active evaluation [16]. In the controversy examined here, the definition of pre-prepared food was directly related to whether consumers believed that the price was justified, whether the restaurant had represented its practices accurately, and whether its products could still be trusted. Users therefore had reasons to engage with the new information rather than dismiss the controversy or withdraw from it.

At the same time, accepting the new information in full could imply that an earlier judgment about the restaurant had been misplaced. Act rationalization/reformulation provided an intermediate route. It enabled users to acknowledge some elements of the emerging evidence while narrowing or redefining their previous position. In this way, old and new cognitions could be made partially compatible without requiring an explicit admission that the original judgment had been entirely wrong.

This process may also be understood through compensatory control theory. Individuals have a psychological need to perceive the world as orderly, predictable, and explicable. When an event becomes uncertain or appears inconsistent, they may restore a sense of order by reconstructing its meaning or causal structure [17]. The development of the consumer-affairs controversy disrupted an initially simple distinction between "pre-prepared" and "freshly prepared" food. Users were consequently required to decide which forms of industrial processing counted as pre-preparation and which stages of preparation were most relevant to consumer judgment. Reformulating these conceptual boundaries helped restore an intelligible framework for evaluating the restaurant.

Comments such as "It's not pre-prepared; it's pre-made" illustrate this mechanism. Such statements did not necessarily deny that industrially processed ingredients had been used. Instead, they shifted the operative criterion from whether any pre-processing had occurred to whether the final preparation was completed on-site. This reformulation allowed users to accommodate the new information while preserving the earlier judgment that the restaurant remained distinguishable from businesses selling fully prepared meals.

The discourse of some users also resembled the trajectory of the restaurant's own response. The company moved from a categorical denial toward commitments concerning production transparency and changes in on-site preparation. Users similarly adjusted the boundaries of their earlier claims rather than reversing them completely. Although institutional crisis communication and individual dissonance reduction involve different motivations, both relied on a comparable discursive process: redefining the conditions under which an earlier claim could remain valid.

Act rationalization/reformulation in this case should therefore not be understood simply as denial or deliberate self-justification. It also represented an attempt to rebuild cognitive order under conditions of informational uncertainty. Because the controversy affected practical evaluations, users had to engage with the conflicting evidence; because full attitude reversal carried psychological costs, they often did so by revising the interpretation of their original position.

5.5. Quick defense/source disparagement in the entertainment case

Quick defense/source disparagement accounted for the great majority of comments in the entertainment case. Unlike the comparatively interpretive responses found in the consumer-affairs case, many comments reduced

dissonance by attacking the credibility, motives, or morality of the opposing party.

The structure of the dispute likely contributed to this pattern. The entertainment case developed through directly competing accounts offered by Zhao Lusi and Galaxy Cool Entertainment. The company's denial and Zhao's subsequent rebuttal did not produce a single, uncontested factual correction. Instead, they created a conflict over whom the public should trust. This form of competing narrative more readily encourages users to align themselves with one party and interpret contradictory information as an attack on that alignment.

Social identity theory provides one explanation for the predominance of source disparagement. Individuals construct part of their self-concept through group membership and are motivated to maintain the positive distinctiveness of groups with which they identify [14]. In celebrity controversies, support for a public figure can form a salient social identity, particularly when users interact repeatedly with others who express the same allegiance. Information that challenges the celebrity may therefore be experienced not merely as new evidence but as a threat to the supporter group. Social media can intensify this alignment by fostering parasocial relationships with celebrities; such relationships can make celebrity-related information personally meaningful and consequential to supporters [18, 19].

Under conditions of identity threat, individuals are more likely to defend the in-group and derogate a perceived out-group or threatening source [20]. In the present case, comments frequently constructed the agency as exploitative, immoral, or untrustworthy. Expressions calling for contract termination or condemning the company did not primarily evaluate each disputed contractual or financial claim. Instead, they positioned the agency as the source of harm and affirmed support for the celebrity. Source disparagement therefore simultaneously rejected the competing account and signaled the user's group alignment.

The interactive structure of social media may have further strengthened this tendency. Users tend to interact with sources and peers who share their views, producing relatively homogeneous information environments in which existing attitudes are repeatedly reinforced [21]. In such environments, confrontational expressions can become recognizable templates that are circulated and reproduced within the group. The repeated appearance of closely similar statements in the entertainment corpus suggests that users were not only independently evaluating the dispute but also drawing on a shared repertoire of camp-based language.

This does not demonstrate directly that echo-chamber interaction caused the observed strategy distribution, because the present study did not analyze network structures or comment-to-comment diffusion. It does, however, offer a plausible explanation for the high convergence of aggressive and alignment-signaling expressions. Identity involvement may have created the motivation for source disparagement, while homogeneous interaction made such expressions more visible, acceptable, and reproducible.

The dominance of quick defense/source disparagement in the entertainment case thus appears to reflect the joint influence of competing narratives, identity threat, and the interactional conditions of social media. Where the consumer-affairs case encouraged users to reconstruct an uncertain interpretation, the entertainment case encouraged them to resolve uncertainty by deciding which side deserved trust and discrediting the opposing source.

5.6. Limitations

Several limitations should be acknowledged. First, the study examined only one event from each of the three issue domains. The observed differences may therefore reflect the distinctive actors, chronology, informational structure, and stage of development of the selected cases rather than general characteristics of education, consumer-affairs, and entertainment controversies. Future research should include multiple events within each domain and examine whether the present patterns can be replicated across a broader sample.

Second, the corpus contained only first-level comments. Replies and extended exchanges may reveal how users modify, intensify, or abandon dissonance-reduction strategies during interaction. An analysis of multi-level comment threads could therefore provide a more dynamic account of how cognitive adjustment develops in response to challenges from other users.

Third, the coding framework identified strategies through their dominant discursive functions. Textual expressions cannot be assumed to correspond perfectly to users' underlying psychological states. Comments may also be shaped by platform conventions, humor, strategic self-presentation, imitation, or emotional performance. Interviews, questionnaires, experiments, or mixed-method designs could be used to examine more directly whether the coded expressions reflect the psychological motivations proposed in the present discussion.

Finally, only comments containing an identifiable dissonance-reduction strategy were retained. The findings therefore describe the distribution of strategies within the eligible corpus rather than the reactions of all users exposed to the events. Users who remained silent, posted ambiguous responses, or disengaged without commenting are not represented.

5.7. Implications

The study has both theoretical and practical implications. Theoretically, it extends cognitive dissonance research by showing that publicly expressed reduction strategies may differ substantially across online controversies. Dissonance reduction did not appear as a uniform transition from an old attitude to a new one. Instead, users employed different discursive routes depending on the form of conflict presented by the case. The education case facilitated trivialization, the consumer-affairs case encouraged reformulation, and the entertainment case was dominated by source disparagement. These patterns suggest that cognitive inconsistency is managed not only at the individual psychological level but also through context-sensitive forms of public discourse.

The absence of explicit attitude change further highlights the importance of distinguishing private cognitive adjustment from public expression. On social media, users must manage inconsistency while also protecting a visible identity and maintaining continuity with previous statements. Cognitive dissonance theory may therefore benefit from greater attention to the reputational and interactional conditions under which reduction strategies are publicly performed.

Practically, the findings suggest that responses to public opinion reversals should address the dominant form of dissonance visible in a given controversy. In cases resembling the entertainment dispute examined here, factual correction alone may be insufficient when users interpret information through group identity and source loyalty. Communication should avoid unnecessarily adversarial framing and should separate verifiable claims from attacks on the identities or motives of opposing groups.

The education case suggests that brief clarification may not prevent users from trivializing an incident. Where an issue has broader institutional or ethical implications, communicators may need to explain why the event matters rather than merely correct isolated factual details. Sustained and professionally framed information may reduce the likelihood that clarification is interpreted as proof that the controversy was entirely insignificant.

In consumer-affairs controversies displaying patterns similar to the case examined here, institutions should provide clear definitions, timelines, production information, and explanations of how their current position relates to previous statements. Because users may actively reconstruct the boundaries of disputed concepts, incomplete or inconsistent explanations can increase interpretive uncertainty. A coherent informational

framework may help the public integrate new evidence without relying primarily on improvised rationalization.

These implications remain provisional because each domain was represented by a single case. Nevertheless, the findings indicate that effective public communication should respond not only to the factual content of a reversal but also to the specific psychological and discursive problem that users are attempting to resolve.

6. Conclusion

This study examined how users publicly reduced cognitive dissonance in three selected Weibo public opinion reversal events. A theory-driven quantitative content analysis was applied to 990 eligible first-level comments, with 330 comments drawn from each of the education, consumer-affairs, and entertainment cases. The comments were coded into seven mutually exclusive strategies organized under engaging and disengaging responses, and their distributions were compared at both levels.

Across the corpus, act rationalization/reformulation and quick defense/source disparagement accounted for most coded responses, whereas explicit attitude change was not identified in the eligible comments. The cases nevertheless displayed sharply different profiles. The education case was almost evenly divided between engaging and disengaging responses and contained comparatively frequent trivialization. The consumer-affairs case was dominated by engaging responses, particularly act rationalization/reformulation. The entertainment case showed the opposite pattern, with disengaging responses and source disparagement accounting for the great majority of comments. These results answer the two research questions by showing both a general preference for position-preserving strategies and statistically significant cross-case differences in how that preference was expressed.

The findings suggest that dissonance reduction on social media is simultaneously psychological and public: users manage inconsistency while maintaining a defensible identity before an audience. Practical relevance, identity involvement, and the discursive structure of a controversy may help explain why reformulation, trivialization, or source disparagement becomes more prominent in a particular case. However, because each domain was represented by only one event and only comments with an identifiable strategy were retained, the observed differences should be interpreted as case-level variation rather than stable domain effects. Future research should compare multiple events within each domain and incorporate reply networks, longitudinal traces, and complementary psychological measures to test the proposed mechanisms more directly.

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