

Mechanisms of Adolescent Stress in a Meritocratic Culture: Social Comparison and Attribution Bias

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Abstract

This study investigates the formation mechanism of competitive psychological stress in adolescents under a meritocratic culture, focusing on the dual influences of social comparison and attribution bias. A review of existing research indicates that horizontal social comparison and attributional biases regarding success and failure significantly intensify psychological stress. Quantifiable indicators such as academic performance and appearance are symbolically elevated in competitive environments, while social media further amplifies exposure to idealized individuals, leading to identity anxiety and self-alienation. Different attribution styles—whether internalizing failure or externalizing responsibility—contribute to stress by undermining self-efficacy or fostering hostility toward external systems. Together, social comparison and attribution bias form a reinforcing mechanism of stress, manifested in cognitive distortions, neural sensitization, and behavioural tendencies such as withdrawal or antagonism. The research findings provide a theoretical basis for formulating mental health intervention measures and cultivating a correct view of competition, which is of practical significance for promoting the comprehensive development of adolescents.

Keywords

Attribution Bias, Social Comparison, Meritocracy, Psychological Stress.

1. Introduction

With the development of the society, the competition in the society is getting more and more intense, and the complex, diversified and rapid modernisation process in our country is called "compressive modernisation" by the scholars, which refers to the fact that the economic, political, cultural and other factors have been highly compressed in the dimension of time and space, and the historical and cultural factors at different stages coexist in the same society. In this context, "modernisation" means that economic, political, and cultural factors are highly compressed by time and space, and historical and cultural factors at different stages coexist in the same society. Against this background, "speed" has become a central feature of Chinese society, which lacks a growth mindset and uses a system of quantitative indicators to assess development results, including the evaluation of people and talents. Under such compression, young people inevitably fall into various elimination crises, constantly pursuing performance, quantification and efficiency, which ultimately leads to increasing pressure and the phenomenon of involution. In such a macro-social context, the culture of meritocracy prevails, emphasising personal achievement and performance, and this cultural background has a profound impact on the environment in which young people grow up. Adolescents are facing increasingly intense competitive pressure, and their mental health problems are gradually becoming more and more prominent, especially the psychological stress caused by competition, which has become an important issue that needs urgent attention.

This study focuses on the psychological stress of adolescents in a meritocratic culture and explores its mechanisms in depth. The study starts from two key aspects: social comparison and attributional bias. By analysing the psychological gap that arises when adolescents compare themselves with others in competition and the bias that exists in their attribution of their own successes and failures, the study reveals how these two factors interact with each other, thus leading to the emergence of psychological stress in adolescents. Psychological studies have shown that excessive social comparison activates the brain's "threat response system" (e.g., increased amygdala activity), leading to emotional problems such as anxiety and depression, while negative attributional biases (e.g., categorising failure as a "stable personal trait") further weaken psychological resilience, resulting in the development of a "stable personal trait", which can lead to psychological stress. Social comparison and negative attributional biases (e.g., attributing setbacks to "stable personal traits") will further weaken psychological resilience, forming a vicious cycle of "competitive pressure → self-denial → emotional exhaustion". However, current research has not yet fully revealed the mechanisms by which meritocratic culture affects adolescents' mental health through the interaction of "social comparison" and "attributional bias".

Therefore, the focus of this study is to identify the specific pathways and extent to which social comparison and attributional bias affect adolescents' competitive psychological stress. This study concludes that social comparison and attributional bias have a significant dual effect on adolescents' competitive psychological stress in a meritocratic culture, which helps to understand the root causes of adolescents' psychological stress, provides an important theoretical basis for the development of targeted mental health interventions, and guides adolescents to establish a correct conception of competition and attributional styles, and has important practical significance for the promotion of adolescents' psychological health and comprehensive development. It is of great practical significance for the promotion of adolescents' psychological health and overall development.

2. Literature Review

2.1. A Review of Meritocratic Culture

The concept of meritocracy, initially proposed by British sociologist Michael Young, centers on the allocation of social and economic rewards based on individual ability and achievement. As an evaluative system that directly links personal accomplishments with moral worth, meritocratic culture has undergone a paradigm shift in its cognitive logic, evolving from a tool for social mobility to an exclusionary ideology. Early theories viewed meritocracy as a just mechanism to overcome class stratification, emphasizing the linear formula of "talent + effort = success" [1]. This concept underscores the attainment of individual success through fair competition, predicated on equal opportunity, where high achievers receive corresponding rewards. While meritocracy is believed to incentivize individual striving and progress, it faces considerable criticism. Critics argue that it may exacerbate social inequality, leading to elitism and the denigration of the less privileged. Furthermore, it overlooks the influence of social structures and environments on individual achievement, causing successful individuals to often disregard the roles of luck and timing. In contemporary society, meritocracy is increasingly questioned. It is recognized that meritocracy has not fully realized its vision and may instead become a mechanism for concentrating wealth and privilege. This mechanism not only fosters social division but also potentially reduces social mobility. Domestic discussions on meritocracy primarily focus on its manifestations, impacts, and potential issues within different cultural and social structures. The "meritocratic trap" [2] is essentially a manifestation of the individualistic attribution bias, which disregards the influence of background and luck on individual success. In Western societies, this ideology has led to "the arrogance of the elite" and

“the resentment of the underclass”, thereby triggering social fragmentation. However, in China, the Gaokao (National College Entrance Examination), as a typical representation of meritocracy, reveals the unique manifestations of the meritocratic trap. Sandel's “meritocratic tyranny” is embodied here as the structural violence of the evaluation system—when the educational field mechanically links mobility opportunities with examination rankings, the superficial procedural justice actually reinforces the cultural capital monopoly of vested interest groups [3]. While Chinese students exhibit “differentiation between the upper and lower classes” in attributing the results of the Gaokao, the “humility” mentality may mitigate the arrogance of the elite. More importantly, Chinese society generally believes in the idea of “ascription deserving,” which, unlike Rawls's idea of “deservedness,” is closely linked to meritocracy. This belief helps soften the possible social issues that meritocracy can cause, but it also hides deeper cultural problems.

2.2. The Role of Adolescents in Meritocracy

The meritocratic culture, by linking individual worth to quantifiable achievements, alienates adolescents from participants in the educational system to producers of performance metrics. This role transformation reveals a cognitive shift in the evaluation system from “cultivating individuals” to “screening individuals” – as academic achievement becomes the currency of social mobility, adolescents are compelled to reduce self-worth to a numerical game of ranking. A survey of 328 middle school students in Beijing showed that 81% of respondents viewed fluctuations in grades as a direct reflection of their abilities; this process of value objectification traps adolescents' sense of existence in a cognitive trap of “achievement determinism” [4].

In this role-playing process, adolescents develop survival strategies dominated by instrumental rationality. Festinger's social comparison theory here presents a culturally adaptive variation: traditional horizontal comparisons evolve into vertical “benchmark management”, with 73.5% of high school students adjusting their study efforts by continuously monitoring the gap with “ideal academic achievers” [5]. This self-disciplinary mechanism is confirmed in the attribution patterns of 860 university students in Chongqing, where individuals attributing failure to ability deficits exhibit obvious compensatory involitional characteristics in their learnings [6]. When competition goes beyond school and into social life, teenagers face new challenges that influence their materialistic values; following social media influencers is like visually admiring the idea of success based on hard work and talent [7].

The cognitive dissonance caused by role alienation gives rise to special psychological compensatory mechanisms. Weiner's attribution theory undergoes functional distortion under stress: adolescents construct accidental academic setbacks as systematic ability deficits. This attribution bias presents a chain reaction in a study of math anxiety in 697 high school students, with self-esteem deficits acting as a stress perception amplifier, ultimately leading to learnt helplessness in 27.3% of the sample [8]. More paradoxically, while achievement-orientedism creates anxiety, it also produces dependent psychological defences – an over-reliance on quantitative evaluation systems, which paradoxically becomes a safety net for maintaining psychological balance [9].

3. Dual Mechanisms of Competition on Adolescent Psychological Distress

3.1. Psychological Stress within the Framework of Social Comparison Theory

Within the meritocratic arena, adolescents experience a structural shift in psychological stress derived from social comparison, transitioning from objective ability assessments to a crisis of ontological value. Festinger's social comparison theory reveals a dual alienation in this process: in the horizontal dimension, standardized evaluation systems transform quantifiable metrics like academic performance and physical appearance into symbols of value; in the vertical

dimension, simulated environments constructed by social media expose individuals to algorithmically curated “perfect samples”.[10]

The violent nature of social comparison lies in the interplay of quantitative and symbolic violence. As shown in Table 1, the anxiety index associated with academic achievement (72.3%) is significantly higher than that of hobbies (34.1%) [11], reflecting its direct link to educational stratification. This disparity stems from meritocracy's construction of academic performance as “moral capital”, where exam rankings reflect not only cognitive ability but also serve as the ultimate validation of personal worth. When the comparison target shifts from specific individuals to abstract systems, the stress generation mechanism undergoes a qualitative change: in a mathematical modelling competition, participants' anxiety levels exhibit an exponential relationship with the number of competitors ($\beta=0.83$, $p<0.001$), rather than a linear increase, revealing a collective panic induced by systemic competition [12].

Table 1. A dimensional analysis of the psychological impact of social comparison on adolescents.

Comparison dimensions	Primary Comparator	Typical psychological impact	Level of impact (empirical data)
Academic performance	Class/grade ranking	Frustration, learned helplessness	High (72.3%)
Physical appearance	Social media netiquette	Body image disorder, social avoidance	Medium (58.6%)
Social status	Peer group popularity	Loneliness, belonging anxiety	Medium-high (65.2%)
Family background	Economic capital and cultural capital	Sense of relative deprivation, self-worth denial	Medium (49.8%)
Hobbies	Uniqueness of speciality display	Identity confusion, instrumentalisation of interests	Low (34.1%)

The dynamic model of stress formation reveals a spiral reinforcement mechanism: initial comparison generates cognitive biases (e.g., attributing others' success to stable traits) [13], triggering defensive self-deprecation. This way of thinking changes how the brain processes failure information in the prefrontal cortex by creating new connections (fMRI shows a 23% increase in amygdala activity), which makes people more sensitive to future social comparisons [14]. When teenagers try to escape this negative cycle by changing how they see themselves (like getting cosmetic surgery or cheating in school), they often end up feeling anxious about their identity—this feeling of being disconnected from themselves is shown by the rise in requests for psychological help related to “academic persona” on short video platforms [15].

3.2. Reinforcing effects of attributional bias

Under the meritocratic evaluation system, adolescents' attribution patterns of competitive outcomes show an evolution from objective assessment to cognitive bias. When people blame their failures on unchangeable personal traits (like being less smart), it creates negative thoughts about themselves, which leads to ongoing anxiety about their achievements. On the other hand, attributing failure to external circumstances (e.g., imbalance of educational resources) may lead to a cognitive framework of “structural helplessness”, resulting in motivational decay and behavioural withdrawal. This polarised attributional bias reinforces psychological stress through a dual pathway: the former leads to a chronic depletion of self-worth, while the latter triggers persistent hostility towards the external world[16][17].

Table 2. Psychological attribution type analysis table

Types of attribution	Typical cases	Psychological response characteristics	Long-term effects ^[18]
Internalised attributions	'Lack of aptitude for science' after failing a maths competition	Collapse of self-efficacy	Subject avoidance behaviour
Internalised attributions	Failure to meet standards in sports tests attributed to 'deficits in physical coordination'	Somatisation anxiety	Social withdrawal tendencies
Externalising attributions	Blaming 'monopoly of educational resources by key schools' for failing in higher education	Institutionalised anger	Anti-authority tendency
Externalising attributions	Blaming 'judges' geographical bias' for failure in art competitions	Hostile attribution bias	Reduced competition participation

Reinforcement mechanisms of attributional bias show significant individual differences at the cognitive-neural level. Functional MRI studies have shown that prefrontal cortex activation levels are decreased in internalised attribution dominants, suggesting inhibition of executive functioning, whereas amygdala response strength is elevated in externalised attribution preferences, predicting impaired emotion regulation ^[19].

In summary, under a meritocratic evaluation system, social comparison and attributional bias jointly form the core mechanism of psychological stress among adolescents. Social comparison transforms quantifiable factors such as academic performance and appearance into markers of personal value, while social media amplifies perceived gaps, leading to persistent anxiety. At the same time, different attribution patterns—whether internalizing failure as a lack of ability or externalizing it as systemic unfairness—further intensify psychological burden by undermining self-efficacy or provoking emotional reactivity. This stress mechanism, driven by comparison and attribution, manifests in cognitive distortions, neural hypersensitivity, and behavioural tendencies such as avoidance or hostility, constituting a major source of mental health risks for today's youth.

4. Conclusions

The culture of meritocracy alienates competition as a multiplier of psychological stress, and its core mechanism is a vicious cycle of social comparison and attributional bias. When adolescents are subjected to a one-dimensional evaluation system, they not only have to cope with objective academic challenges, but also have no choice but to be caught up in a constant battle to deplete their sense of self-worth. Such pressure does not stem from the competition itself, but from the cognitive bias behind the competition - equating a momentary academic achievement with a person's full worth, and reducing the dynamic growth process to a static marker of competence. From the perspective of attribution theory, meritocracy deepens the cognitive misunderstanding of 'ability determinism'. Adolescents tend to attribute test failure to stable internal factors (e.g., lack of intelligence) while ignoring variable external factors (e.g., test-taking strategies). This biased attribution creates a closed loop of "fear of failure → avoidance of effort → actual failure", essentially replacing true growth mindset with a psychological

defence mechanism. Social comparison plays a catalytic role in this process, and when the educational environment is overly focused on ranking and stratification, peer group excellence is no longer used as a resource for learning, but is instead perceived as a compression of one's own survival space. The solution to this dilemma is to redefine the nature of competition. The prerequisite for healthy competition is to separate "comparison" from "evaluation"—the former can be used as a frame of reference for self-understanding, while the latter should not be used as the sole criterion for defining oneself. Educational practices should guide young people to build a multi-dimensional self-awareness system, such as using growth portfolios instead of score rankings, and relieving outcome anxiety through process-based evaluation. This is not only a structural correction of the single logic of meritocracy, but also a necessary way to help adolescents rebuild their psychological resilience.

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