

Platformized Subjectivity: How the “Biological Machine” Metaphor Reshapes Elite Chinese Learners on Xiaohongshu

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Abstract

This study investigates how the environment of an algorithmic platform influences the subjectivity of learners through metaphorical discourse. Content analysis of 55 Xiaohongshu posts and 22 interviews with elite Chinese learners reveals a coherent "Biological Machine" metaphor system in which behaviour is input and output, brains are processors, and growth is a system upgrade. We find that 18 of 22 learners internalise this computational logic as algorithmic identity, reporting affective costs, including chronic exhaustion and emotional flattening. Six enact resistance through counter-metaphors and embodied refusal — four of them while also showing internalisation — indicating that internalisation and resistance are not mutually exclusive positions but coexisting orientations.

We introduce “platformized subjectivity” as an analytical framework integrating Conceptual Metaphor Theory with Foucauldian analytics of algorithmic governmentality, arguing that platform environments make certain metaphorical self-understandings more visible and normative for learners.

Keywords: platformized subjectivity; algorithmic identity; conceptual metaphor theory; neoliberal governmentality; Xiaohongshu; elite learners

1. Introduction

A 2026 post on Xiaohongshu with 9,464 likes states: “In the age of AI, the biggest bug is not technology but thinking.” The post described a recursive AI workflow, equating slow cognition with obsolete software, emotions with system errors and illness with failed hardware. That nearly ten thousand learners endorsed this self-mechanisation raises a question: when students encounter such content daily, does it begin to change how they describe themselves? Does “I’m exhausted” become “I’m running low on battery”?

This question motivated the present study. As digital platforms increasingly mediate educational life, subjectivity increasingly appears as a site where algorithmic forms of governance become visible. Yet existing scholarship exhibits three critical gaps. Platform studies (Gillespie, 2018; van Dijck, 2013) study algorithmic curation, but rarely the metaphorical aspects of circulated discourse. Conceptual Metaphor Theory (CMT; Lakoff & Johnson, 1980) explicates cognitive mappings but overlooks platform mediation as a condition of metaphor circulation. Educational technology research (Williamson, 2017) critiques datafication, but leaves inadequately to be theorised the affective consequences and possibilities for resistance, particularly in non-Western contexts. This paper addresses these gaps by bringing together all three traditions: analysing which metaphorical repertoire circulates within this platform niche, how that metaphorical repertoire influences how learners will describe themselves, and at what affective cost.

To fill these gaps, this study asks: (RQ1) What metaphor system organises self-optimisation discourse on Xiaohongshu, and how is it made visible to learners? (RQ2) How do elite learners internalise machine logic as algorithmic identity and what affective costs does this involve?

(RQ3) Where do the possibilities for resistance emerge? This study examines discursive resonance - structural alignment between platform language and learner self-description - rather than causal determination. Our cross-sectional design cannot establish temporal precedence; we can establish that the correspondence is systematic, internally coherent, and accompanied by real affective costs.

We make three theoretical contributions: introducing "platformized subjectivity" as a dialectical framework for subject-formation under algorithmic capitalism; extend CMT into platform-mediated contexts where metaphor visibility is informed by engagement dynamics; and offer empirical analysis of how involution culture (内捲) and suzhi imperatives interface with algorithmic capitalism to yield distinct configurations of platformized subjectivity in China.

2. Theoretical Framework

Three scholarly traditions illuminate platformized subjectivity.

Algorithmic governmentality. Foucault's (2008) analytics of neoliberal self-governance, extended to platform contexts by Gillespie (2018) and van Dijck (2013), argues that platforms govern not through overt command but through visibility: what gets amplified becomes what feels normal. Rose's (1999) "technologies of the self" take digital form in recommendation systems that make self-optimisation feel voluntary while structuring its terms. Indeed, the scholarship has not theorised the metaphorical vocabularies through which such governance becomes thinkable — the gap RQ1 addresses.

Conceptual Metaphor Theory. Lakoff and Johnson (1980, 1999) show that metaphors are not rhetorical decoration but cognitive architectures that structure thought, perception, and action through mappings from source domain to target domain. Accept "brain equals CPU" and the

entailment that slow thinking is a performance defect follows automatically; the inference is built into the metaphor. Charteris-Black (2004) moves on to critical discourse analysis, showing how metaphors naturalise ideologies. What is left open is how platform algorithms selectively amplify certain metaphorical repertoires, making particular ontological possibilities more visible.

Neoliberal subjectivity. Brown (2015) argues neoliberalism transforms subjects into human capital requiring perpetual optimisation. Ahmed (2004) theorises how social structures systematically foreclose certain emotional experiences, while Xiang (2021) situates these dynamics within a broader condition of "suspension" in contemporary Chinese life, in which the present is indefinitely deferred for an imagined future. Together, these frameworks explain why treating oneself as an optimisation project feels not coercive but rational: it is the vocabulary a hyper-competitive environment makes available. Our contribution is to specify the platform mechanisms through which this vocabulary achieves discursive primacy.

Synthesising these traditions, we propose “platformized subjectivity”: a mode of self-understanding emergent at the intersection of algorithmic curation, metaphorical discourse circulation, and embodied internalisation. This framework is dialectical - subjects are both produced by and productive of algorithmic formations, advancing beyond both technological determinism (Zuboff, 2019) and voluntarist accounts of user agency

3. Methodology

3.1 Research Design

This study employs dual discourse analysis, combining platform text analysis and semi-structured interviewing to capture both the discursive constitution of platformized subjectivity and its lived dimension, treating subjectivity as produced out of the dialectical

interaction between text and interview rather than as purely discursive or purely experiential.

3.2 Platform Corpus

We conducted systematic content analysis of 55 publicly available Xiaohongshu posts published between February 2024 and February 2026, retrieved in January–March 2026. Our keyword-guided sampling revealed three conceptual clusters: cognitive metaphors (底層邏輯, "second brain"), body instrumentalisation (生物駭客, "body tuning") and efficiency systems (量化自我, "input-output ratio"). Posts ranged from 1 to 9,464 likes (Mdn = 73, IQR = 372). Metaphor identification used the Metaphor Identification Procedure (MIP; Pragglejaz Group, 2007) along with CMT's triple (source domain, target domain, entailments) to chart metaphorical patterns in the corpus. In this work, we perform criterion-based sampling by focusing on the posts that explicitly contain identifiable metaphorical structures, allowing us to study metaphor systems rather than estimating metaphor prevalence. Coding followed an iterative process of MIP and thematic analysis, supported by analytic memos documenting how categories were refined across successive passes through the corpus.

3.3 Learner Interviews

We conducted 22 semi-structured interviews with elite learners - operationalised as current or recent students who demonstrate highly technologically mediated study practices (regular use of productivity tools, self-quantification, optimisation discourse fluency). The participants were aged 20-27 ($M = 22.45$) with 13 mainland, 2 Hong Kong and Macau SARs, 7 overseas, covering 5 disciplines. Interviews ($M = 19.1$ min) were conducted via Tencent Meeting in February 2026, audio-recorded and transcribed. The protocol encouraged spontaneous metaphorical language through open-ended questions about daily learning rhythms, cognitive and affective states, and

conceptions of self as a learner, while deliberately avoiding the use of efficiency related terminology. The study adopted a thematic analysis of computational metaphor use, self-tracking and affective experience. As a qualitative exploratory study, the aim is depth of interpretation not statistical generalisation; the findings shed light on the range of possible responses to platform discourse, not on their distribution in any wider population. Participant characteristics and individual metaphor counts are summarised in Table 1.

Table 1

Participant Demographic and Metaphor Profile (N = 22)

ID	Gender	Age	Level	Discipline	Location	Duration	Metaphors	Dominant family
P01	Male	23	Undergraduate	Business/Econ	Mainland China	17:20	4	VIOLENCE (3)
P02	Male	24	Undergraduate	Humanities/SS	Canada	22:26	4	BODY (2)
P03	Male	27	Doctoral	Humanities/SS	Singapore	15:14	6	LEARNING (2)
P04	Male	20	Undergraduate	Business/Econ	Canada	16:02	4	MACHINE (2)
P05	Female	20	Undergraduate	Humanities/SS	Mainland China	17:10	4	PARADOX (2)
P06	Male	26	Undergraduate	STEM	Guatemala	22:41	5	MACHINE (4)
P07	Female	20	Undergraduate	Humanities/SS	Mainland China	19:48	4	MACHINE (3)
P08	Male	20	Undergraduate	Business/Econ	Mainland China	24:58	4	MACHINE (2)
P09	Female	27	Undergraduate	Business/Econ	Mainland China	17:03	4	MACHINE (3)
P10	Female	22	Undergraduate	Humanities/SS	Mainland China	18:07	4	MACHINE (3)
P11	Female	22	Master's	Humanities/SS	Mainland China	18:59	3	MACHINE (2)
P12	Male	22	Undergraduate	STEM	Mainland China	19:06	5	MACHINE (3)
P13	Non-binary	20	Undergraduate	Humanities/SS	Mainland China	15:29	3	MACHINE (2)
P14	Male	20	Undergraduate	STEM	Mainland China	12:17	4	MACHINE (2)
P15	Female	24	Master's	Humanities/SS	Hong Kong SAR	20:04	3	MACHINE (3)
P16	Male	20	Undergraduate	STEM	Mainland China	16:02	2	Dispersed
P17	Male	20	Undergraduate	STEM	Mainland China	36:17	6	MACHINE (6)
P18	Female	27	Undergraduate	STEM + Business	Mainland China	15:08	4	MACHINE (3)
P19	Female	20	Master's	STEM + Humanities	Singapore	19:38	3	Dispersed
P20	Male	20	Undergraduate	STEM	United States	22:24	5	MACHINE (3)
P21	Male	26	Doctoral	Humanities/SS	United Kingdom	14:30	5	RESISTANCE (2)
P22	Female	24	Undergraduate	Humanities/SS	Macau SAR	19:16	7	MACHINE (6)

Note. Age $M = 22.45$, range 20–27. Interview duration $M = 19.1$ min. Locations: mainland China ($n = 13$), Hong Kong and Macau SARs ($n = 2$), overseas ($n = 7$). A total of 93 metaphors were identified. “Dispersed” indicates that no single family accounted for more than one metaphor.

3.4 Ethical Considerations

This study was conducted as an independent research project and was not subject to formal institutional ethics review. It was nonetheless designed and carried out in accordance with the BERA Ethical Guidelines for Educational Research (2018) and, for the platform data component, the Association of Internet Researchers Ethical Guidelines 3.0 (franzke et al., 2020).

All interview participants gave informed consent prior to recording. Before each interview they were told the purpose and scope of the study, how the recording would be used, and that they could decline any question or end the interview at any point without giving a reason. Participants were also offered access to the completed paper, and were told they could request the removal of any quotation attributed to them after reading it.

Participants are identified throughout by pseudonymous codes (P01–P22). Names, institutions, and any details that could enable identification have been removed or generalised; disciplines are reported only at the broad category level. Recordings and transcripts were stored locally on password-protected storage accessible only to the author and were not uploaded to third-party transcription services.

Platform data were drawn exclusively from publicly visible posts. No private accounts, comments, or direct messages were collected, and no attempt was made to contact or identify individual posters. Usernames and account identifiers are not reported; post titles are cited only where they are necessary to the metaphor analysis, and no individual poster is characterised or evaluated.

4. Findings

4.1 The Biological Machine: A Governing Metaphor System (RQ1)

Analysis of the Xiaohongshu corpus reveals not a collection of scattered analogies but a systematic metaphorical regime. Five mappings organise the corpus, though at markedly uneven frequencies: BEHAVIOUR IS INPUT–OUTPUT LOGIC ($n = 28$), BRAIN IS CPU/PROCESSOR ($n = 23$), SELF-GROWTH IS SYSTEM UPGRADE ($n = 11$), BODY IS HARDWARE/BATTERY ($n = 4$), and EMOTION IS SYSTEM BUG ($n = 1$), yielding 67 mapping instances across the 55 posts. The coherence of this system lies in entailment rather than in frequency: the mappings imply one another even where the corpus articulates some of them only rarely. Accept "brain equals processor" and slow thinking automatically becomes a performance deficiency; if emotions are bugs they are to be eliminated not attended to; if the body is hardware then rest is just charging time not a legitimate need. Together the mappings project a cybernetic ontology in which the human subject is reconfigured as an information processing system whose value is entirely in efficiency, scalability and continuous optimisation. It is this entailment structure which makes the system ideologically powerful: the acceptance of one mapping pulls the learner structurally toward the others, so that the ontological package feels less like an ideology and more like a description of reality. Notably, the two rarest platform mappings—BODY IS HARDWARE and EMOTION IS SYSTEM BUG—are among the most frequent in the interview data (BODY_AS_MACHINE, $n = 11$; EMOTION_AS_DISTURBANCE, $n = 6$), suggesting that learners extend machine logic into domains the platform itself largely leaves unspoken.

Representative posts showcase the reach of the system. In 如何構建你的第二大腦系統，提升人生效率 ("How to Build Your Second Brain System to

Boost Life Efficiency"), the author constructs cognition as data architecture, memory as storage, and attention as processing allocation. In 我的 2025 年度生產力工具，槓桿力拉滿！ ("My 2025 Productivity Tools—Maximum Leverage!", 4,347 likes), study effort is framed as input and academic outcomes as output, with the ratio between them serving as the measure of a well-run day. In 四大AI，我站在了新時代的起點 ("Four Major AIs: I Stand at the Starting Point of a New Era", 9,464 likes), the most widely circulated post in the corpus, negative emotional states are named as bugs to be debugged rather than experiences to be understood. Taken together, the posts reveal an ontology in which the human learner is constituted as a cybernetic system that needs to be constantly debugged and upgraded.

The posts in this corpus circulate widely: likes ranged from 1 to 9,464 (Mdn = 73, IQR = 372), with several metaphor-dense posts exceeding 2,000 likes. Our criterion-based sampling was designed to capture metaphor systems rather than to compare metaphorical and non-metaphorical content, and the corpus therefore cannot speak to whether algorithmic mechanisms preferentially amplify machine metaphors. What it does show is that these framings are readily available and highly visible to learners who inhabit self-optimisation communities on the platform.

4.2 Algorithmic Identity: Internalisation and Its Costs (RQ2)

Eighteen out of twenty-two (81.8%) participants demonstrated algorithmic identity following Cheney-Lippold (2011) - the embodied adoption of computational metaphor as a self-understanding framework. This manifested through three overlapping mechanisms that together reveal how platform-level discourse becomes lived experience.

First, metaphorical description of self. Eighteen participants spontaneously described

cognition and affect using machine language without apparent awareness of its metaphoricity, producing 50 such metaphors ($M = 2.78$ per participant); the largest subcategory, COGNITION_AS_COMPUTATION, accounted for 23 instances. The full set of mappings and their entailments is set out in Table 2, and the distribution of metaphor families across the interview corpus is shown in Figure 1. P17 offered the most explicit formulation, describing his mind as “大腦就像處理器一樣運轉” (“my brain runs like a processor”), a direct instantiation of the BRAIN IS CPU mapping identified in the platform corpus. P07 described her concentration difficulties as “我的腦子就像宕機了一樣，就是轉不動了” (“My mind seems to have crashed; it just won't work”), using a term for server failure to describe her own mind. For these participants the machine metaphor appears to function as a dominant interpretive lens rather than a consciously chosen rhetorical device.

Second, self-tracking practices. Some described structuring their study life using Notion, Obsidian and Pomodoro timers, viewing sleep as charging and their body as hardware needing upkeep. P14 described building “心智圖與數據看板” (“mind maps and data dashboards”) in Notion — an externalisation of the BRAIN IS CPU mapping into a working digital architecture. P05 said of one study app: “他有一個學霸模式，可以讓我有一種被迫自律的感覺” (“it has a ‘top-student mode’ that gives me a feeling of being forced into self-discipline”). The paradox is instructive — forced, yet self-discipline. This is exactly what Foucault (2008) describes as the voluntariness of neoliberal self-governance - that is, external logic being carried out as a first-person imperative. The tools themselves represent machine logic, and P05's account shows how this logic is internalised as a personal standard rather than experienced as an external coercion.

Third, affective reshaping. Nine (40.9%) participants reported suppressing emotional

experience by thinking of feelings as system variables that needed optimisation. P08 said: “情緒對我很多時候是一種干擾.....它會打破這種穩定的科研生產” (“emotions are often a kind of interference for me ... they break this stable research production”). The phrase “research production” is revealing: learning becomes factory, emotions become disruptions to the production line. To feel is to malfunction; to suppress is to optimise. This framing is not felt as external pressure but as rational self-management - precisely the form of neoliberal self-governance that Foucault (2008) associated with the highest level of effectiveness, that is discipline presenting itself as freedom.

The affective costs are real and documented. All 18 internalising participants reported chronic exhaustion. Six participants reported somatic distress, including chronic headaches, insomnia, and panic attacks. A majority described emotional flattening as a normalised daily experience. Following Ahmed (2004), we read these as affective residues: excesses of embodied experience that the machine framework cannot accommodate, accumulating as unprocessed somatic cost. These discursive costs operate at two levels. Affective foreclosure: emotions are reframed as computational malfunctions, constraining the capacity to use feeling as information about one’s situation. Ontological reduction: the body is decomposed into components and metrics, and this quantification displaces the felt sense of the body as an integrated whole. These form a systematic pattern of discursive alignment between platform language and learner self-description; that is, a process that has real affective costs, yet remains invisible, precisely because optimisation discourse reframes exhaustion as evidence of insufficient effort.

Table 2

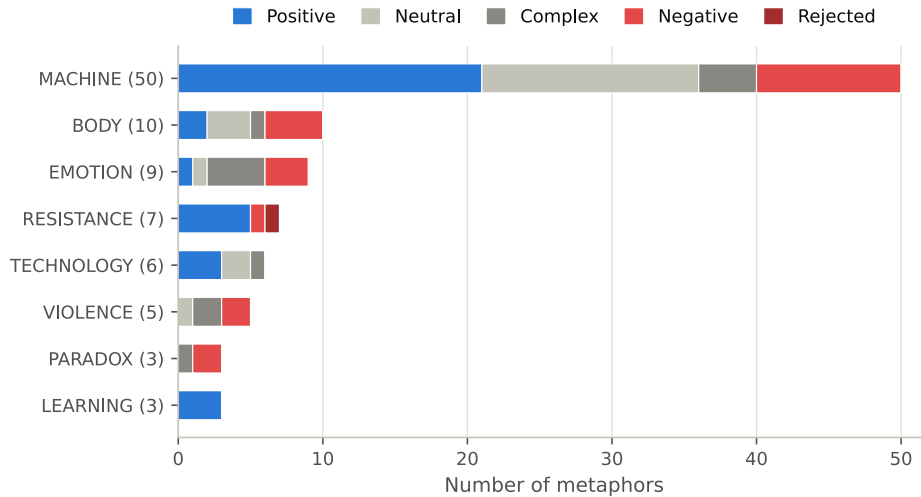
The Biological Machine Metaphor System: Mappings, Entailments, and Exemplars

Mapping	Source → Target	Entailment	n	Exemplar
COGNITION AS COMPUTATION	Algorithm/quantification → learning decisions	Decisions can be weighted and computed; intuition is unreliable	23	P17: “0.8 for important-not-urgent, 0.5 for urgent-not-important”
BODY AS MACHINE	Machine/battery → body	Rest is recharging, not a need	11	P10: “at that point it should force-shut-down ... and reset”
BRAIN AS PROCESSOR	Computer → cognition	Slow thinking is a performance fault	7	P07: “my brain crashed (dangji)”
MECHANICAL METHOD	Assembly line/SOP → study routine	Thinking can be detached from execution	9	P10: “entering a standardised-process mode of action”
EMOTION AS DISTURBANCE	Signal/noise → emotion	Feeling should be eliminated, not attended to	6	P08: “emotion is, for me, a kind of interference”
BODY AS CONTAINER	Vessel → body	The body is a cavity to be filled or emptied	3	P12: “the body is just a container that carries tasks”
ANTI-MECHANISTIC [counter]	Embodiment/holism → body	Mind and body are not separable	5	P21: “the body is myself — it is me”
PASTORAL LEARNING [counter]	Animal husbandry → learning	Growth takes time; it cannot be debugged	2	P03: “free-range, I suppose (sanyang)”

Note. $N = 93$ metaphors from 22 participants. Categories with $n < 3$ are omitted except the two counter-mappings, which are retained as negative cases. Chinese terms are romanised in parentheses.

Figure 1

Distribution of Metaphor Families by Affective Valence



Note. $N = 93$ metaphors from 22 participants. Valence was coded during metaphor identification and refers to the speaker’s evaluative stance toward the mapping, not to the researcher’s assessment. “Rejected” denotes an explicitly repudiated mapping.

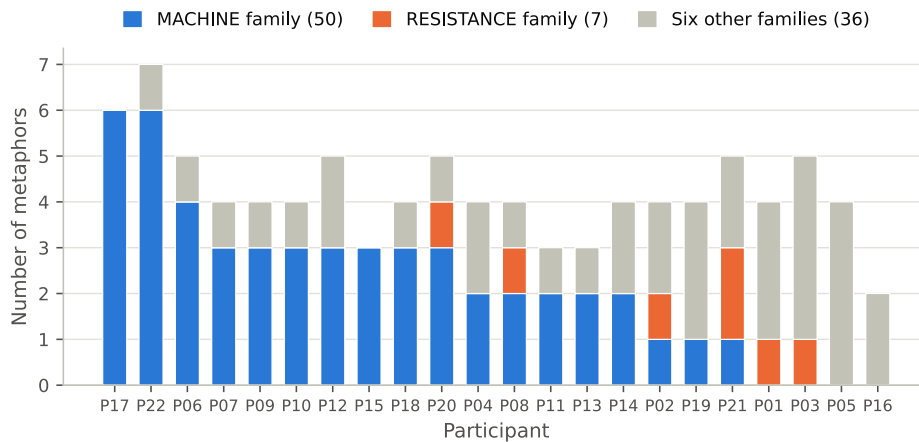
4.3 Resistance: Contested Terrain (RQ3)

Six (27.3%) participants enacted substantial resistance, revealing that platformized

subjectivity is a contested domain rather than a platform-determined outcome. Internalisation and resistance were not mutually exclusive: four of these six also displayed features of algorithmic identity, suggesting that learners can hold computational self-descriptions and counter-framings simultaneously rather than occupying one position or the other. Individual metaphor profiles, showing the co-occurrence of machine-family and resistance-family metaphors within the same participants, are presented in Figure 2. Three types of resistance were identified.

Figure 2

Individual Metaphor Profiles Ordered by Machine-Family Frequency



Note. $N = 93$ metaphors. Eighteen of 22 participants produced at least one machine-family metaphor. Six participants (P01, P02, P03, P08, P20, P21) produced resistance-family metaphors, and four of these six also produced machine-family metaphors, indicating that internalisation and resistance are co-occurring rather than mutually exclusive orientations.

Counter-metaphors. P03 framed learning through 散養 (“free-range” cultivation)—“更多是自己的一個節奏和習慣” (“mostly based on my own rhythm and habits”). This is not a rejection of learning but the introduction of a very different image of what learning should be: loosely tended, organically paced, resistant to scheduling and optimisation. Contrast this with the SELF-GROWTH IS SYSTEM UPGRADE mapping and 散養 gets SELF-GROWTH IS ORGANIC

CULTIVATION with its own entailments: growth takes time, requires patience, and cannot be forced through debugging.

Bodily refusal. P02 stated simply, “I’ll just listen to my body and go to sleep.” In a discursive environment where the body is hardware to be overridden when productivity demands it, choosing to hear the body as a legitimate source of knowledge constitutes resistance. P22 also mentioned shaping “自己覺得舒服的節奏” (“a rhythm that feels comfortable”). Treating bodily comfort as one valid criterion to organise study time, rather than a malfunction to be debugged.

Metric rejection. P22 noted “我比較看重自己的心情” (“I care more about my mood”)—replacing productivity metrics with affective well-being as the primary criterion for evaluating a day. P07 reflected that copying others' productivity systems from social media “效率也不高” (“didn't work well”), developing instead a sceptical distance from circulated optimisation narratives.

Critically, what distinguished these participants was access to alternative accounts of what learning is, what the body is for, and what makes a day meaningful. Because several of them also used machine metaphors, these alternatives appear to operate alongside rather than instead of computational self-description — a coexistence that the notion of complete internalisation cannot capture. Internalisation and resistance are not random: they are grounded in learners' prior relationships to self-optimisation discourse formed before and beyond any particular platform encounter. The system brings together and amplifies existent dispositions; it does not create them from scratch. This is a hypothesis for future longitudinal research: prior alignment with optimisation logic will mediate whether machine metaphors are absorbed or refused. The three resistance forms identified here - counter-metaphors, a bodily refusal and a metric rejection - are

not idiosyncratic but are structurally coherent alternatives, each organised around a different ontological assumption about what a learner is.

5. Discussion

5.1 Platformized Subjectivity: Theoretical Contributions

Our results enable three theoretical advances. First, we introduce platformized subjectivity as an analytical concept to understand subject-formation under algorithmic capitalism. The concept has three characteristics. Discursive constitution by algorithmic curation: certain metaphorical framings are densely present and highly visible within particular content niches, thus influencing what becomes thinkable as appropriate selfhood. Our corpus does not permit inferences about algorithmic amplification, but it documents that machine-metaphor framings are densely present and widely circulated within this discourse niche — a condition of visibility that is consistent with, though not evidence for, platform participation in naturalising particular ontological vocabularies. Embodied internalisation: platform discourse does not mechanically determine subjectivity but requires what Foucault (1988) calls practices of the self. The 81.8% internalisation rate shows how computational metaphors are not just spoken but enacted through productivity tools, self-tracking apps and affective management routines. Contested terrain: affective overflow (exhaustion, somatic breakdown) and counter-metaphors reveal that algorithmic governmentality encounters real limits. This account goes beyond Zuboff's (2019) technological determinism while avoiding voluntarist celebrations of user agency; platformized subjectivity is dialectical; that is, subjects are both produced by and productive of algorithmic formations.

Second, we extend CMT into platform studies: where CMT has mainly analysed everyday

speech and political discourse (Charteris-Black, 2004), we show how metaphorical systems may gain greater visibility within platform environments through engagement dynamics, creating potential feedback loops between discourse, visibility and user adoption. Metaphor analysis must therefore account for the algorithmic conditions of metaphor circulation.

Third, we extend Foucauldian analytics of neoliberal governmentality by specifying platform-circulated optimisation discourse and its associated self-tracking practices as contemporary technologies of the self. Where Foucault (1988) analysed confession rituals and Rose (1999) investigated therapeutic psychology, we analyse the metaphorical vocabularies that circulate within Xiaohongshu's algorithmically curated environment — showing how self-optimisation is taken up as self-surveillance in the algorithmic age. Platforms exercise influence through visibility rather than explicit norms — not the panopticon's gaze but the algorithm's curation. Our data empirically demonstrate how neoliberal subjectivity operates through freedom: participants who internalise algorithmic identity do so through genuine self-production, not external coercion, which is precisely what makes the discursive costs affective-ontological rather than merely ideological.

5.2 The Chinese Context

China's educational ecology provides an important interpretive backdrop. The gaokao system establishes academic performance as life-defining; *suzhi* (素質, “quality”) discourse emphasises the moral and intellectual cultivation of individual value through sustained self-improvement (Kipnis, 2011); and *內捲* (involution) names the collective trap of competitive intensification without advancement (Xiang, 2021). Several participants invoked *內捲* when discussing learning pressures, deploying it simultaneously as description and critique—naming

the absurdity while remaining caught within it. This cultural vocabulary primes certain learners to receive machine-metaphor discourse as a precise articulation of pressures they already feel.

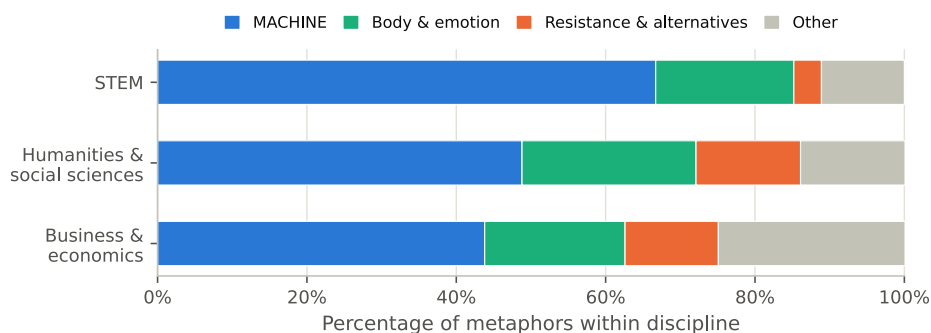
The platform provides language; the pressures exist prior to and beyond it.

Optimisation discourse in our data was not exclusively local. Participants studying overseas and those in mainland China drew on the same repertoire of tools and framings — Notion, Obsidian, Pomodoro protocols, English-language productivity vocabulary — indicating that this discourse travels through transnational digital infrastructures before meeting local educational traditions. Internalisation rates did not differ meaningfully between the two groups, and with $n = 22$ the sample cannot support subgroup comparison in any case.

Disciplinary background showed a comparable pattern. Machine-family metaphors accounted for 66.7% of all metaphors produced by STEM participants, compared with 48.8% among those in the humanities and social sciences and 43.8% in business and economics (see Figure 3). The same caution applies: with six, ten, and four participants respectively, these proportions are descriptive rather than inferential, and they indicate at most that computational self-description is not confined to technically trained learners.

Figure 3

Metaphor Family Distribution by Disciplinary Background



Note. Percentages are within-discipline shares of all metaphors produced by that group. STEM $n = 6$ (27 metaphors), humanities and social sciences $n = 10$ (43 metaphors), business and economics $n = 4$ (16 metaphors). Two interdisciplinary participants (P18, P19) are excluded. Given the small subgroup sizes, these distributions are descriptive only and do not support inferential comparison.

5.3 Implications and Limitations

For teachers, the machine metaphor is a pedagogical force that needs to be critically engaged with rather than a transparent tool. A metaphorical literacy -the capacity to recognize metaphorical framings and to question their entailments -should be fostered within any critical digital literacy curriculum. If EMOTION IS BUG, what gets foreclosed? If BRAIN IS CPU, what organic and relational capacities disappear into the background? Legitimising rest, contemplation and unproductive time as pedagogically valuable - not downtime but essential learning - directly contests machine-metaphor logic. For platform designers, algorithmic design has ontological consequences. The question of what kinds of self-understandings a platform makes visible or closes is an ethical not a technical question. For researchers, the affective and somatic costs of platform epistemologies represents an underexplored domain that qualitative and phenomenological methods are particularly situated to shed light on.

Several limitations bound interpretation. The corpus ($N = 55$) enables close metaphor analysis but cannot support claims about platform-wide discourse. The interview sample ($N = 22$) limits generalisability beyond elite, technologically mediated learners. Solo coding without inter-rater reliability verification constrains analytical certainty, mitigated through systematic MIP procedures and analytical memos. The cross-sectional design prevents causal interpretation; what we can achieve is discursive resonance, not causal determination. Future studies should focus on longitudinal designs to explore how platformized subjectivity develops in educational transitions, comparative analyses across platforms (Bilibili, TikTok, Douban), extended demographic scope beyond elite learners, and intervention studies of metaphor literacy

approaches.

6. Conclusion

This study shows that digital platforms do not just influence how learners study: they make certain metaphors of learning more visible and more normative. The "Biological Machine" metaphor system which is widely circulated on Xiaohongshu is internalised as an algorithmic identity by 81.8% of our participants. This is associated with systematic affective-ontological costs, a discursive pattern in which emotional experience is reframed as malfunction and bodily needs are subordinated to optimisation logic. That 27.3% enact meaningful resistance shows that this is not a totalising pattern: other self-understandings are available to those who have the discursive resources to maintain them against the pull of optimisation logic.

The concept of platformized subjectivity offers a productive analytical lens for subject-formation under algorithmic capitalism, capturing the dialectical quality of contemporary selfhood: neither determined by platforms nor freely chosen against them, but produced through ongoing negotiations between algorithmic infrastructures, circulating discourses, and embodied experience. Future research should expand on this framework through studies using longitudinal designs, comparative platform analyses, and expanded demographic scope. As algorithmic platforms not only shape but increasingly mediate how we learn and how we come to understand ourselves as learners, the question of what kinds of self-understandings such systems enable us to think or close becomes a question of our time.

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