

COMMENTARY

Digital environments and human agency in the age of AI: How algorithmic logic compresses or restores authentic being

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Abstract

Contemporary AI-mediated platforms systematically narrow the conditions under which authentic agency can be expressed—a process Commentary terms *stage compression*, operating at two levels: synchronically, constraining the range of identities available in any given interaction; diachronically, foreclosing the developmental windows within which genuine identity exploration can unfold. Existing health psychology frameworks address downstream symptoms without theorising these structural conditions. This Commentary identifies this gap and sketches Dual Agency Theory for Authentic Being (DAT) as one possible direction: drawing on structuration theory, relational autonomy frameworks, and self-determination theory, DAT proposes that self-directed and other-directed agency are mutually constitutive. Platform success, on this account, should be measured not by engagement metrics but by whether users develop stronger capacities for self-regulation and genuine social connectedness.

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1. Introduction

The mental health literature has documented a growing crisis in the wellbeing of young people with considerable rigour. What it has not provided is an adequate structural account of why. Prevailing frameworks—from social media screen-time studies to neurodevelopmental risk models—treat digital environments as exposure variables that act upon psychologically bounded individuals. While multiple structural factors contribute to this crisis—including socioeconomic inequality, educational access, and cultural change—one dimension that health psychology has not yet adequately theorised concerns the design logic of AI-mediated environments themselves. This framing misses something fundamental: contemporary AI-mediated environments do not merely influence how people feel; they systematically reshape the conditions under which human agency can be exercised at all—generating documented concerns about the stability of selfhood and authentic presence in AI-mediated life.¹

2. Stage compression: The narrowing of identity and agency in digital environments

Health psychology has established that perceived control and autonomy are foundational

to wellbeing. Self-determination theory identifies autonomy, competence, and relatedness as universal psychological needs.² These frameworks assume, implicitly, that environments are at least neutral with respect to users' capacity to act. Contemporary AI-mediated platforms do not meet this assumption. Recommendation algorithms, engagement-optimisation systems, and AI-curated social feeds progressively determine the parameters within which users can configure their own attention, identity, and relational presence. Science and technology studies has long established that technical artefacts encode power and politics:³ platform design does not merely respond to social patterns but actively constitutes the conditions for agency and selfhood. Recent reviews of AI integration in nursing document parallel concerns—including the potential loss of professional autonomy and human-centric decision-making under algorithmic management⁴—conditions under which genuine other-directed care becomes structurally compromised. I term this *stage compression*—an intentionally polysemous construct with two empirically distinguishable dimensions. Synchronically, it denotes context collapse⁵: algorithmic feeds flatten previously segregated audiences into a single interactional frame, narrowing, in any given interaction, the range of identities available for performance (Goffman). Diachronically, it denotes the foreclosure of developmental windows (Erikson) within which identity exploration ordinarily unfolds, as engagement-optimised design forecloses the low-stakes, reversible experimentation that identity formation requires. The two dimensions are empirically separable—a platform could compress one without the other—and are hypothesised, not asserted, to be mutually reinforcing over time. Stage compression is not claimed wherever digital mediation occurs: the construct is bounded to environments combining algorithmic curation, engagement optimisation, and cross-context audience merging, and should attenuate in environments lacking any of these three features. Operationalisation follows from the two dimensions: synchronic compression as within-platform variance in self-presentation across otherwise-distinct audiences; diachronic compression as reduced identity-repertoire exploration across a person's developmental or professional life course. Because both operate below the threshold of individual awareness, frameworks that measure individual orientations cannot fully diagnose it—a gap that motivates the direction sketched below.

3. Where existing frameworks fall short

Psychological authenticity research operationalises authenticity as a stable individual difference—an orientation toward self-awareness, unbiased processing,

and behavioural consistency.⁶ These contributions are important, but they are built to detect stable individual variation, not the within-person, cross-context variation that stage compression's synchronic dimension predicts: a trait-authenticity score is designed to stay constant precisely where stage compression should make it move. A person high in dispositional authenticity will still experience systematic stage compression within environments that actively constrain the range of identities available for enactment. On the other hand, existing burnout literature identifies structural contributors to role strain—including workload, reduced autonomy, and erosion of community. Yet what remains untheorised is a more fundamental level: not the depletion of resources or competence, but the compression of the very capacity for self-directed being that makes resource depletion chronic and recovery structurally unstable. What is needed is a framework that theorises authentic being as a structural capacity—one that design can compress, and in principle restore.

4. A new framework to consider: Dual agency and its mutual constitution

As one possible response to this gap, Dual Agency Theory for Authentic Being (DAT) is sketched here: a framework proposing that authentic being is not a fixed disposition but an ongoing enacted capacity, sustained by structural conditions for genuine self-configuration, relational presence, and the capacity to be moved by another's reality—and that self-directed and other-directed agency are not separable but share a common structural cause in the environmental compression described above. DAT proposes that two directions of human agency operate simultaneously and cannot be understood in isolation. The first is *self-directed agency*: the capacity to configure and enact one's own identity, meaning, and relational presence. The second is *other-directed agency*: the capacity to genuinely witness another and allow their authentic presence to emerge—the condition that makes meaningful relational engagement possible. DAT's working hypothesis is that the two directions are inseparable: authentic care for others becomes possible only when one's own authentic being is sustained. Such a framework would draw on and depart from three established traditions: structuration theory's account of agency as simultaneously enabling and constrained,⁷ relational autonomy frameworks in professional ethics,⁸ and self-determination theory's account of how autonomy support enables authentic engagement in others.² Its central departure is to theorise self-directed and other-directed agency not as separable but as mutually constitutive at the structural level. DAT is scoped here to relationally-structured professional roles—nursing, teaching, caregiving—where institutional

design (rosters, documentation burden, algorithmic triage) shapes practitioners' capacity for both directions of agency at once; it is not advanced as a universal account of all interpersonal relationships. Within that scope, DAT generates a prediction that distinguishes it from frameworks treating the two directions as independent: interventions that expand practitioners' self-directed agency (e.g., configurational control over scheduling or documentation workflows) should produce measurable downstream change in other-directed agency (patient-rated presence, relational quality), net of workload and staffing controls. DAT would be disconfirmed by evidence that the two directions of agency vary independently within the same structurally compressed environment.

5. Restoration of authentic being by design

If stage compression is a structural condition produced by design, then it is also, in principle, addressable through design. Table 1 sketches what such a reorientation might look like in practice. At the interface level, for instance, the first design orientation could be implemented through user-adjustable interaction parameters; the third through platforms surfacing offline social engagement metrics rather than tracking online dwell time. If stage compression forecloses the possibility of genuine human contact by design, that design choice is not ethically neutral: technologically mediated communication measurably attenuates the inter-brain neural synchrony that characterises live interaction.⁹ Emerging governance scholarship has reframed what platform success means: not whether users retain the capacity for connection, but whether systems actively produce the conditions for it.¹⁰ For health psychology, this carries a concrete implication—platform success should be measured not by usage duration or compliance rates, but by whether users develop stronger capacities for self-regulation and deeper senses of self and social connectedness. In this sense, well-designed AI-mediated platforms function as online-to-offline gateways for relational wellbeing: their value lies not in how long users remain within them, but in the frequency and quality of genuine human encounters they make possible beyond them.

6. Scope and counter-considerations

This argument should not be overstated; three considerations bound its scope. First, evidence on AI-mediated interaction is not uniformly consistent with compression: a randomised trial of a culturally-adapted CBT chatbot among Chinese university students produced significant short-term reductions in loneliness and depression¹¹, an outcome DAT would predict only under specific, bounded design conditions (Table 1), not

as a general property of AI mediation. Second, individual differences moderate exposure: users higher in dispositional authenticity⁶ or with stronger pre-existing offline networks likely experience identical platform architecture differently, an interaction this Commentary's structural focus does not itself model. Third, authentic being is not a culturally uniform construct: independent and interdependent self-construals¹² weight self-directed and other-directed agency differently, which may mean DAT's inseparability claim holds more readily in relationally-oriented cultural contexts than in the individualist settings from which its structuration-theory and self-determination-theory lineage originates. Each qualification identifies a condition under which the central claims should weaken or reverse, and each generates a research question below.

Table 1. Two design logics: engagement-optimised design versus design for genuine human encounter

Engagement-optimised design logic	Design for genuine human encounter
Eliminates unpredictability through algorithmic optimisation; produces echo rather than genuine encounter	Preserves genuine otherness as a structural feature; enables encounters that can authentically surprise and change the user
Locks users into a narrow band of high-arousal emotional states through variable reward; diminishes conditions for embodied attunement	Supports a range of relational modes; users retain authority over how they are present in each encounter
Converts others into preference-confirmation objects; measures success by retention and return frequency	Functions as a gateway to genuine human encounter; measures success by the real-world connections it enables beyond the platform

Notes: The table presents two ideal-typical design logics as heuristic contrasts across three independent dimensions. Real-world platforms may exhibit different combinations of these orientations—aligned with DAT-oriented design on some dimensions while retaining engagement-optimised features on others. Each dimension represents a distinct design choice, not a single underlying scale.

7. Research agenda

These propositions generate concrete priorities for health psychology. How do different AI integration architectures affect the dual agency trajectories of frontline healthcare workers over time? Can stage compression be operationalised as a health-relevant construct, distinct from burnout and depressive symptomatology, with its own measurement indicators? Potential indicators might include cross-contextual role identity flexibility and discrepancies between intended and enacted self-

presentation in digital environments. What design features most reliably support configurational authority for practitioners and patients alike? These questions are especially pressing in caregiving contexts, where AI integration directly threatens the conditions under which genuine therapeutic presence is possible.

A further priority is developing expert consensus, situated within the Ottawa Charter's framework of supportive environments for health, on what constitutes human-agency-preserving AI in healthcare settings—a translational agenda beyond this Commentary's scope.

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