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How Does Childhood "Disappear" in the Algorithmic Age? ——The Ontological Poverty of Childhood and Ethical Intervention

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Abstract. The "disappearance of childhood" in the algorithmic age does not only refer to the cross-age flow of information in Neil Postman's book, but refers to an algorithm-based systematic shift of the child as the existential anchor of Dasein. This paper constructs an analytical framework from the three-dimensional structure of "space–time–intersubjectivity", and examines how the algorithm squeezes children's existence at the three levels of cognition, action and being. In space, the cognitive justice of childhood is deprived, the pure land of information is replaced by traffic logic, and the information environment cannot be controlled by the child itself and thus loses power; in time, the natural duration of growth is compressed into stress reactions, socialization experiences are replaced by traffic-chasing herd behavior lacking truthful experience, and the child cannot control its own growth pace and falls into incapacity; in intersubjectivity, real Others are replaced by data mirrors, the ontological basis of empathy and cooperation is hollowed out, and the information and interaction ecosphere in which childhood is situated becomes distorted. It can be seen that the disappearance of childhood is a kind of ontological poverty in cognition, in initiative and in the confirmation of existence. In response to the three-dimensional predicament, this paper proposes the path of "cognitive repair—time sovereignty—the return of the Other", aiming to rebuild for children a sovereign existential space in the algorithmic world.

Keywords: the disappearance of childhood, algorithmic black box, ontological poverty, ethical intervention

1. Introduction

In the algorithmic age, childhood is no longer the socialization stage orderly settled by print media in the traditional sense, but an open, algorithm-arranged, self-entangling stage of cognition. That is, how far childhood grows can only depend on the child's own level of handling the algorithm, without external guarantee. In the technological society, children's cognitive materials are alienated by the algorithm, and cognitive justice cannot be guaranteed; the time of subjective participation disappears, and active participation becomes passive herd-following; the interaction ecology is mirrored by the algorithm, and emotional interaction with real subjects cannot be achieved. "The

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algorithmic colonization of cognition leads to the loss of children's learning of sociality and initiative, the technical disciplining of space leads to the weakening of the richness and reality of children's lives, and the technical intervention of relations leads to the weakening of the authority of educational relations and the loss of intimacy." [1] Since Postman opened media criticism with the proposition that "childhood is the product of information management technology", research on the algorithm and childhood has shown a trend of divergence along multiple paths. From Postman's *The Disappearance of Childhood* to the "digital enclosure" of children in the digital age, changes in the media environment are redrawing the boundary between childhood and adulthood [2]. Media ecology examines how algorithmic recommendation exposes children to adult information too early; in the posthuman and phenomenological approaches, Braidotti's concept of the "posthuman childhood" reveals the deep entanglement of children with technological systems [3], and Searle and Stiegler respectively focus on the erosion of children's attention and spiritual shaping by digital technology; in the STS and philosophy of technology paths, Gardner-McTaggart proposed the concept of "ontological capture" [4], pointing out that predictive platforms not only mediate children's experience, but also reconstruct the existential conditions of their experience. Domestic scholars have approached the alienation of children's subjectivity by the algorithm from the perspectives of Heidegger's "challenging-forth", and the spatial discipline of Lefebvre and Foucault.

Although existing studies each have their own emphasis in specific paths—some focus on the cross-age flow of information content, some on the reconstruction of existential conditions, and some on the disciplinary mechanism of spatial power—they have not yet formed a systematic interpretation of the existential situation of children in the algorithmic age. Combining Heidegger's "challenging-forth" and Foucault's spatial discipline, the instantaneous capture of children's attention by the algorithm, and the mechanized reflection of children's experience by predictive platforms, this paper converges the scope of research on the reshaping of the existential structure of children by algorithmic recommendation from the three dimensions of cognition, action and being—that is, cognitive disempowerment, participation incapacity and subject distortion, and attempts to propose: the "disappearance of childhood" in the algorithmic age is essentially the systematic encoding and disciplining by the algorithm of the three-dimensional unfolding of "space–time–intersubjectivity" of the Dasein of children. This paper aims to dismantle the negative impact of the algorithm on childhood from the three ontological angles, and to build a wall protecting the autonomous existence of childhood through targeted ethical intervention.

2. Cognitive disempowerment under spatial translation

Pasquale revealed in *The Black Box Society* how algorithmic decision-making evades accountability due to the lack of transparency, making key social decision processes incomprehensible and uncontestable [5]. The ubiquitous algorithmic black box makes users unable to explain algorithmic information with an accurate standard, and children's prefrontal cortex and entire cognitive system are not yet fully developed, so they are even more likely to fall into the cognitive trap of being carried away by the algorithm, and cannot accomplish the mission of completing the shaping of stable values in early socialization. The understanding of the algorithmic black box mostly remains at the surface layer of information translation and transmission. But in fact, this process interrupts the coherent chain of information cognition, and in turn shapes the meaning-constructing capacity of the receivers of information. Having lost the independent capacity of meaning construction, users will lose the cognitive existence unique to humans as well as the capacity to reflect on the world, and are no different from cold data machines that only receive what the algorithm gives.

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2.1. Cognitive disempowerment: algorithmic translation leads to the passivity of meaning construction

The translation theory proposed by Latour in *Science in Action* aims to answer how scientific facts and knowledge are dynamically constructed in heterogeneous networks composed of human and non-human actors through continuous negotiation, transformation and interest linkage [6]. Under the horizon of this theory (ANT), the short-video recommendation algorithm is not a neutral information pipeline, but a powerful "non-human actor", which integrates heterogeneous elements into a stable network through translation and coordination [6]. Through continuous data translation, it decodes every unconscious slide, brief stay or random like of the child into computable data nodes —reconstructing the information order and the way facts are reconstructed. The "obligatory passage point" of the algorithm sets the only entrance of cognition: children no longer look at the world with curious eyes, but are passively placed in the information flow already sorted by the algorithm. Algorithmic technology dissolves the aesthetic freedom of the subject through sensory domestication and collusion with capital, and short-video platforms intensify the narrowing of aesthetic vision through collaborative filtering mechanisms, forming the information cocoon effect [7].

To be specific, the translation of the algorithm fragments the world into computable data nodes at the operational level, and deprives the child of the capacity to actively construct the meaning of the world at the level of consciousness. Latour's translation describes what the algorithm does, while Husserl's analysis of intentionality can explain the influence of this operation on children's cognition. Husserl held that the essence of consciousness is intentionality—that is, consciousness is always consciousness "of something", which actively constitutes the identity and meaning of the object. This constituting process relies on the stock of "pre-understanding" held by the subject: only with the corresponding life experience and knowledge background can consciousness synthesize scattered sensory materials into complete objects. But the translation of the algorithm precisely cuts off this channel of active constitution. When information is presented in fragmented visual symbols and stripped of the original generative context of things, what children face is a great deal of manifold lacking the stock of pre-understanding—they cannot trace the causal chain behind a piece of news or a behavior, and can only passively jump among isolated information points.

Intentionality has lost the object basis of its active synthesis, and the cognitive capacity is degraded to passive reception. In the era of print media and unified textbooks, information had narrative coherence and the value undertone of the will of the state, and the intentionality of children could still complete its constituting function in an orderly information environment. Under the spatial order of algorithmic translation, children seem to browse the world, but actually lose the initiative of cognition and become passive receivers on the data chain of the algorithm, resulting in cognitive disempowerment. Children with cognitive disempowerment will be like puppets on strings, at the mercy of the algorithm. How the people in the videos delivered by the algorithm act, children can only mechanically imitate because they have no independent cognitive standard of their own, and finally, without even noticing it themselves, become "pseudo-mature" little adults.

2.2. False precocity: the deprivation of children's cognitive justice

The failure of active intentional constitution superficially keeps consistent with others in behavior, but is actually extremely passive in cognition, and children can only passively imitate. The cognitive disempowerment brought by translation makes children unable to truly control the redundant information and they can only imitate, shaping the phenomenon that children who imitate adult

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behaviors out of interest can gain more benefits in early years. Cognitive justice means that, whether precocious or not, all members of society can be placed under the same set of social value standards for judgment. For children, the deprivation of cognitive justice means that children with cognitive disempowerment, due to their lower degree of socialization, cannot "follow" a precocious standard in the public sphere, and thus cannot obtain the corresponding value guarantee based on equal cognition, and cannot get the arrangement of rights and responsibilities in the community based on their actual abilities. This deprivation of cognitive justice forces the occurrence of false precocity. False precocity means that children mechanically imitate adult behaviors when their own value core is not yet stable, and interest becomes the only standard of behavior. For example, in early socialization occasions such as schools, the "little adults" who can imitate adults will be appointed by teachers as class monitors, gain trust and obtain authority, while other ordinary children can only be arranged and lose the initiative in the community.

False precocity occurs because translation gives children who are naturally good at imitating an algorithmic information base. They superficially imitate adult behaviors, but do not understand the value core.

Stiegler once diagnosed the deprivation of the symbolic production capacity of the subject by the technical system with "symbolic poverty"—what the algorithm provides for children is not a world to be understood, but a set of already encoded behavior templates: how love should be performed, how social interaction should curry favor, how conflicts should be handled. These templates strip away the causal chain and the connotation of responsibility; children do not need to participate in the generation of meaning, but only need to execute the script of the algorithm, and the result is a false precocity lacking a value core.

The essence of false precocity is the "pseudo-adult"ization of the whole existential structure of childhood, and its ethical consequence is that children lose the innocence and purity they should have had. At the individual level, children lose the right to build the value foundation in slow and complete narratives, and are thrown too early into adultified language and power logic, thus losing power completely in the active control of the cognitive environment—they seem well-informed, but are actually emptied of the capacity for deep understanding, becoming cognitive hollow men wearing the coat of adults. At the school micro level, a deformed "pseudo-adult" ecology is bred. Some children imitate the secular interpersonal norms acquired from the algorithm, regard pleasing teachers and squeezing out peers (school bullying) as the performance of "maturity", while children who keep their innocence and are not good at performing are instead excluded. The school reward mechanism also tilts toward children who know how to perform—cognitive justice suffers structural damage at the group level, and the spatiality of childhood as a pure land of cognition is thus annihilated. In addition, in the social media field, children, as scarce resources in the field of short videos, are being placed by capital under the commercial context and production logic, and are alienated into tool-men who can only perform under the gaze, and the behaviors and appearance of "internet-famous children" show adultification tendencies [8].

3. Participation incapacity in time acceleration

In space, the algorithmic black box makes children lose the stable value environment, but if time could slow down and let children explore the truth of information on their own, good results would also be achieved. But the technological society is accelerating its changes, making children's participation pace out of control, and in order to keep up with the standard they can only confront active participation with stress reactions.

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3.1. Participation incapacity: instantaneous updating dissolves the basis of active projection

Late modern society is trapped in the cycle of "technical acceleration—acceleration of social change—acceleration of the pace of life", and technological iteration forces the metabolism rate of social information to keep rising [9]. Specifically, the exponential growth of technological iteration triggers the acceleration of social change, and finally leads to the loss of control of children's life pace. Under Rosa's logic of social acceleration, the algorithm not only occupies space, but also compresses the time bandwidth of the unfolding of life. In the print media era, childhood, as an institutionalized and recognized cognitive postponement period, had its core function in providing a slow socialization time not oppressed by material production, allowing children to gradually acquire social norms through trial and error and repeated practice. The instant updating of the algorithm completely flattens this time interval, and the temporal thickness of cognition is dissolved into instantaneous information density. On the one hand, the time interval of information updating is greatly shortened. Children's active projection needs time, but before they can analyze and make a judgment, the previous video has ended, and the autonomous structure of projection cannot be tested in practice, so children remain in a state of unclear consciousness for a long time; on the other hand, the thickness of children's cognitive attention per unit time is also dissolved by instantaneous stress reactions. Pushed videos often contain a lot of editing and special effects, and the content is extremely diverse; this is a pressure for children with insufficient cognitive bandwidth—the thickness of attention is already insufficient, and is contested by too many elements together, so they can only react passively and cannot process actively. Together these lead to childhood being accelerated and iterated. Digital resources and screen learning alienate children's natural disposition, making them break away from the original growth rhythm under "challenging-forth", and algorithmic evaluation obscures the existential value of children [10]. Children no longer have the time to "sink down and circle back, savor with composure" to understand what responsibility is and what intimate relationships are, but are swept forward by the high-speed information flow.

As Dasein that can explain its own existence to the world, authentic growth should be the process in which Dasein projects toward the future and unfolds itself in the "readiness-to-hand" dealings with the world. Projection is not a specific plan drafted by Dasein, but the basic way of being of Dasein— "Dasein has always already projected itself upon its own being. As long as Dasein is, it is projecting." [11] At the same time, Dasein does not first know the world as a calm onlooker, but is immersed in the concerned dealings with things in their "readiness-to-hand" (Zuhandenheit), and this is authentic growth. However, the acceleration logic of the algorithm precisely dissolves this double condition of becoming—regarding the first dimension analyzed above, it deprives Dasein of the time margin for unhurried projection and compresses the time for processing information extremely tightly; regarding the second dimension, the dissolution of cognitive thickness per unit time, it replaces the "readiness-to-hand" relation of children with the world by the passive "present-at-hand" reception of fragmented information, and children cannot process it well, so that growth is downgraded from the unfolding of "potentiality-for-being" to the mechanical replication of prefabricated templates. First, in the high-speed social media context, children do not have enough time to complete the contextual preparation of "being-in-the-world". The information conveyed by every message and every video is extremely discontinuous; they have no time for contextual processing, so they have no stable cognitive basis. Whatever information the video tells children, children will imitate, and the curious and deviant behaviors are exactly the easiest to push in the algorithmic world; children imitate just because they "see", and then commit deviant behaviors themselves. Second, they are swept along by a pre-understanding social media context whose

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updates are too fast even to react to; this context has no clear directional guidance, only constantly changing popular hotspots. Too many elements also distribute the already insufficient cognitive thickness of children, which makes children unable to grasp this rapidly updating language environment, unable to project forward, and can only respond passively, and the cognitive thickness used for processing information is dissolved by instantaneous reactions. With insufficient cognitive thickness, children cannot realize what is right and what is wrong, and only see the data traffic brought by deviant behaviors, becoming the carriers that put the deviant video content pushed by the algorithm into reality.

The acceleration of the algorithm also extremely compresses the time window for the identification and correction of deviant behaviors. A sex education class in school needs an hour of explanation and discussion, while the algorithm can push dozens of short videos that have long reduced intimate relationships to visual consumption within one second—there is an unbridgeable ontological gap between the time scale of education and the time scale of the algorithm. When deviant behaviors have been repeatedly reinforced before being noticed by the institution, discipline forever lags behind the spread of deviance.

The dissolution of the basis of children's projection leads participation to degenerate into a mechanical conditioned reflex. Superficially passively chasing the changes of the algorithm and imitating the adultified behaviors in videos, they are in fact stress-response chasing of the existence standard of das Man, losing the initiative of participating in their own temporal projection, and this is a participation incapacity before a stable value core is formed.

3.2. Unconscious deviance: the alienation of children's authentic growth

The growth mode children should achieve is being able to effectively process the external information they contact by traversing their own internal values, so that they can also carry out well-grounded intentional projection for future life. But the index-style following of massive information leads to the gradual marginalization of children's scope of action in an unconscious state, and deviant behaviors occur.

Unconscious deviance occurs because the temporal basis of children's authentic growth is dissolved by technology. Freud's psychoanalysis pointed out that in early childhood the superego is gradually formed through delayed gratification and the internalization of taboos—what this process needs is precisely temporal buffering and situational stability, so that impulses undergo internal review and transformation before acting. Han further pointed out in *Psychopolitics* that digital algorithms cancel this buffer through affirmative instant gratification—it no longer shapes the subject through prohibitions as traditional discipline did, but dissolves the necessity of the subject's self-examination by constantly satisfying immediate desires. When every curiosity of children can be instantly satisfied by the algorithm and every impulse can be released without waiting, the conditions for the formation of the superego are emptied out. Under technological conditions, the desiring self is instantly satisfied and constantly reinforced. Whenever I want to see some information, I can search on the search engine and immediately get massive related information; after repeated browsing, the algorithm will learn my interest pattern through deep learning and continue to push, and the user continues to be attracted, the desiring self is constantly satisfied by the algorithm and the desire pattern is constantly reinforced. But only watching videos is not enough to satisfy the gradually strengthening desiring self, and the arrival of deviant behaviors is a necessity of "cognition–behavior" consistency. But authentic growth often needs to calm down and think, and needs delayed gratification to make value choices. Thus, under the conditions of lacking both time for internal digestion and negative discipline for boundary marking, in order to satisfy their

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expanding desires, children's behavioral boundaries begin to slide toward the taboo zones of the adult world, and children's growth is replaced by the templated replication of adult behaviors. They imitate the intimate behaviors, violent expressions and provocative postures in videos, not out of malice or precocity, but because the algorithm never leaves them the gap of "stopping to think".

This pseudo-maturity comes at the cost of sacrificing the accumulation of the value core; it seems "well-informed", but is actually a deviance completed unconsciously. The younger-age trend and normalization of deviance keep delivering "hollow adults" with unstable value cores to society. They did not experience enough trial and error, waiting and internal digestion in childhood, and were pushed by the acceleration logic into the appearance of the adult world; deviant behaviors for them are not an active challenge to boundaries, but a conditioned-reflex response to external stimuli under algorithmic feeding. After growing up, they may be able to skillfully imitate the external behavior patterns of social roles, but always lack a value coordinate slowly generated by themselves to give these behaviors real meaning—the boundaries not internalized in childhood finally, with the persistent social deviance and relational disorder in adulthood, become the price of it in the ontological sense.

4. Ecological distortion under power discipline

Algorithmic translation has changed children's cognitive space, and time acceleration lets passive reactions replace active participation, while the real interaction between people is the core unfolding field of children's existence. Traditional discipline is external and compulsory, while the discipline of the algorithmic age is often hard to perceive; the reason lies in that the deep learning of the algorithm mirrors the pushing, the natural and rich information ecology is dissolved, and children gradually indulge in the dialogue with the self and thus cannot establish the capacity to interact and empathize with real Others.

4.1. Ecological distortion: intersubjective interaction is replaced by the algorithmic mirroring

To understand the erosion of children's growth by the operation of algorithmic power, one must first clarify the original meaning of childhood as an ontological structure. Descartes' "I think therefore I am" established the certainty of the subject, but left behind the problem of other minds; this difficult problem obtained a more primordial inquiry in Heidegger's analysis of Dasein: Dasein has never been an isolated "I", but "being-in-the-world", whose essence lies in being-with others. Childhood is exactly the unfolding stage in which Dasein is not yet settled: children gradually open the meaning of the world in the encounters, frictions and dialogues with others, and generate the self in real intersubjective practice. The growth of Dasein is not the accumulation of information, but an ontological process of opening itself to possibility through being-with.

However, the operation of power in the algorithmic age has undergone a fundamental turn—from the external discipline of panopticism described by Foucault [12], to the endogenous control in Deleuze's sense: no physical walls are needed, and the modulation of the subject is realized through data flows and algorithmic prediction. Han further diagnosed it as "psychopolitics" [13]: the algorithm no longer suppresses you with "negative prohibitions", but makes you addicted with "affirmative satisfaction", completing the recruitment in pleasure. This transformation of discipline manifests in children as the double dissolution of the ontological structure of childhood:

On the one hand, it is the disappearance of the real presence of Others. Husserl pointed out in *Cartesian Meditations* that the establishment of the self cannot be separated from the empathic perception of Others—only in the encounters, frictions and dialogues with Others can children

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realize the objectivity and plurality of the world, and thus constitute a truly intersubjective world [14]. But the precise pushing of the algorithm constructs a homogenized pseudo-environment, systematically excluding the intrusion of heterogeneous Others—children no longer need to deal with people they dislike, no longer need to face boring but necessary rules, and no longer need to endure conflicts of opinions.

On the other hand, it is the discipline of the self-subject by the algorithmic mirror. When the external real Others gradually exit, they are replaced by the "another self" precisely calculated by the algorithm based on deep learning: every like, favorite and viewing duration is fed back into a more precise self-mirror image, and what children see is no longer the plural appearance of the world, but their own preferences amplified by data. The two are actually two sides of one thing: the other side of the disappearance of Others is exactly the infinite reinforcement of the self by the algorithmic mirror. Heidegger once pointed out that the everyday falling of Dasein often vanishes into "das Man"—and in the algorithmic age, this "das Man" is refined into a "digital das Man" composed of data profiles, and children sink into it, losing the resoluteness and self-awareness aroused by "anxiety" when facing real Others.

For children, the deepest crisis lies in the formation of "internalized self-reinforcement": through deep learning of their likes, favorites and viewing durations, the algorithm calculates the most irresistible dopamine stimulation points, making every click seem to come from my own will—thus, the translation in Latour's sense and the control in Deleuze's sense converge here: translation provides the spatial configuration of homogenized information, and control ensures that this configuration is experienced as free choice. Psychopolitics completes its most exquisite operation: not to suppress the subject, but to make the subject self-reinforce by satisfying the subject, thereby completing the full colonization of the intersubjective ecology of children in pleasure. The Other disappears, replaced by a still mirror that only reflects the algorithmic self-image—childhood, as the ecological space in which being-with unfolds itself, thus becomes distorted.

4.2. The fading of links: the existential exercises of empathy and cooperation are cut off

Husserl's analysis of intersubjectivity shows that the self as self is not the result of an isolated monad of consciousness constituting itself alone, but is generated in the continuous empathic perception of Others. This generative process needs repeated, real, friction-bearing exercises to sustain. It is in the "exercises" of quarreling and reconciling with peers again and again, of conflict and negotiation, of misunderstanding and clarification, that children gradually acquire the capacity of perspective-taking and the skill of cooperation. However, the mirroring data feedback of the algorithm cuts off this necessary existential exercise—children should gain real links with others in the intersubjective ecosphere, but this is blocked by the disciplining of the mirroring data of the algorithm. The data reflection makes children no longer go through the emotional exercise of empathizing with others, and not try to establish cooperative relations with others; the algorithm cuts off this necessary existential exercise.

In terms of ethical consequences, at the individual level, children lose the opportunity to generate the capacity of empathy in real interpersonal frictions. Empathy is not an ability carried in human nature, but is slowly honed in repeated collisions with different Others. When the algorithm filters out for children all the content they dislike and all the people who do not match them, children no longer need to call on empathy to understand Others. The result is that in childhood, when the capacity of empathy most needs to be shaped, this capacity falls into developmental stagnation. "The disappearance of the Other" starts from childhood; this is no longer the traditional personality withdrawal, but the shaking of the ontological foundation of the human being as a social existence.

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At the community level, the homogeneous information feeding dissolves the real basis of children's social cooperation, and also makes the subject fall into the vortex of interaction addiction. On the one hand, the premise of cooperation is being able to understand and accept differences—different opinions, different emotions, different interest demands. But what the algorithm shapes is a self-centered world that is "always right"; children never encounter real external resistance in it, and the capacity of cooperation is therefore never really activated. Then, when a generation lacks deep interaction with real Others in the process of growing up, the links between people are no longer an organic symbiosis based on emotion and understanding, but an atomic juxtaposition arranged by the algorithm. Childhood, as the garden where intersubjectivity should be generated, has its vitality interrupted by the algorithm. It will finally emerge in adulthood as a social structure lacking empathy, failing in cooperation and atomized—this is the final sedimentation of the ecological distortion caused by the algorithm in the social structure. On the other hand, the instant updating of the algorithm pushes too much social information to users, making users have to fall into the vortex of "replying to messages anytime and anywhere", staying in constant interaction and response, sacrificing the time left for their own deep thinking. If children keep soaking in the environment of interaction surplus, they will form an unconscious habit, being used to having superficial verbal exchanges with other unauthentic Others like themselves, because this saves the most time and energy, and is the optimal strategy under the environment of interaction surplus. And they cannot really touch their own hearts, and also lose the capacity to really move others. At this point, the algorithm realizes the double disciplining in the sense of psychopolitics: it dissolves the real Others, and also strengthens the discipline of the subject.

5. The unified logic of ethical operations

AI technology is integrating into the growth trajectory of minors at an unprecedented speed, but the "information cocoon" caused by algorithmic recommendation limits the cognitive vision, burying hidden worries about rights and interests [15]. The full penetration of digital technology into children's lives is already an irreversible social trend; complete isolation from the algorithm neither conforms to the realistic logic of technological development, nor benefits the basic participation rights of children as members of contemporary society. Therefore, ethical intervention is not to isolate children from the algorithm, but to give realistic guarantees to the three-dimensional existential unfolding of children at the operational level, ensuring that children can also achieve benign growth in the algorithmic age. We should reserve for the unfolding of children's Dasein the integrity of cognition, the right to the first-hand experience of action, and the right to the heterogeneity of relations.

5.1. The compensation of cognitive justice: opening the algorithmic black box

Facing cognitive disempowerment, the core principle of ethical operations is "the compensation of cognitive justice"—that is, guaranteeing children's right to contact a diversified information ecology not completely filtered by the traffic logic of the algorithm. This principle requires each subject to make institutional responses within its own functions: at the platform level, the algorithm should provide users with explainable explanations, so that the black box is opened in the cognitive sense and users face the algorithm with an equal posture; at the school level, algorithmic cognition education should be carried out, so that children realize that the interaction with the algorithm itself contains the cognitive shaping of humans by the algorithm. This meta-cognitive awareness can make children raise their vigilance at the ontological level; meanwhile, school social work pays attention

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to guarding the plurality of the cognitive ecology—reserving a certain proportion of heterogeneous information injection for children in the daily interaction with the algorithm, keeping cognitive surprise and the expansion of vision, and preventing the pure land of information from being completely homogenized by the algorithm. Under the condition that the algorithm has become the cognitive infrastructure, helping children change from passive receivers of the algorithm to cognitive subjects with the capacity of active screening is the practical maintenance of cognitive justice by ethical subjects.

5.2. The confirmation of subjective participation: rebuilding the "time buffer zone" of childhood

Through human intervention in information updating, social workers resist the temporal violence imposed on children by the algorithm, so that children can experience autonomously in a selected, beneficial information ecology, and returns time sovereignty to children [16]. This interrupts the continuity of social acceleration, so that children are no longer embedded in the accelerated social time structure dominated doubly by capital and technology [17], have the right to own a period of growth time not eroded by the acceleration logic of the algorithm and open to free exploration, ensure active participation, and take back the integral, dynamic sense of duration of time. With an offline living space, children can recover the disappeared "nearby" [18]. The platform is responsible for providing children with rich information flows, while schools and families become the exploration space for children when they are offline; in this way, children have an autonomous buffer zone not swept by the algorithm. Platforms add duration reminders in the design, reminding children to regularly withdraw from online input; schools guide children to explore autonomously, process the information already received, and establish interest anchors in the real world, and pay attention to adjusting the whole evaluation system, emphasizing the process rather than immediate results. In this way, children's grasp of temporality can be anchored on the behaviors of autonomous participation [19]; families should also do a good job of cognitive guidance, parents cooperate and win together in the interaction with children, encourage children to develop the capacity of independent thinking, and get in touch with face-to-face games and handicrafts, buffering the endless acceleration of time.

5.3. The repair of intersubjectivity: establishing the awareness of interacting with others

To solve the problem of intersubjective interaction, the core principle of ethical operations is "the return of the Other", that is, in the information ecology mirrored by the algorithm, rebuilding for children the existential space of encountering real Others, and reserving for children an enclave of existence not reached by the algorithm where they can really meet unpredictable Others. This principle requires each subject to make corresponding institutional responses at its own position: school education needs to embed heterogeneous interaction links requiring deep empathy and conflict resolution in the curriculum, breaking the self-centered closed loop created by the algorithm; platform design should foreground the dimension of Otherness, forcibly injecting heterogeneous content in algorithmic recommendation, so that children realize that there are Others beyond the self; at the family level, it is necessary to rebuild a de-screened space of real dialogue, helping children distinguish the self-performing to the algorithm from the real self in the heart. The function of social work thus obtains a repositioning at the ontological level: the social worker is no longer a behavior corrector external to the world of children, but an empowerer who helps children preserve, within the algorithm, the remaining space not completely determined by the algorithm.

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Here, the essence of "the return of the Other" is to restore for children an authentic right as relational beings.

6. Conclusion

This paper reveals, from the three dimensions of space, time and power, the systematic reshaping of the existential structure of children by recommendation algorithms—cognitive disempowerment, participation incapacity and subject distortion; the consequence of the superposition of the three dimensions is that the unfolding process of childhood as the "potentiality-for-being" of Dasein is replaced by the pre-encoding of the algorithm. Its goal is not to block the interaction between children and the algorithm—complete isolation is no different from excluding children from the field of contemporary social practice—but to endow, in cognition, the capacity of unconcealing the black box, in time, the projection autonomy to resist the erosion of the algorithm, and in relations, the capacity to resist the homogenized mirror. The substantive intention is to build a spiritual immune system for children against algorithmic alienation, to preserve within the algorithm a remaining space "not completely determined by the algorithm", so that Dasein can still shoulder its own "potentiality-for-being" in the ontological sense.

7. References

[1] Zhou, J. S. (2026). Alienation crisis and ontological return of children's education in the intelligent age. *Studies in Early Childhood Education*, (3), 39–42.
[2] Hong, Y. X., & Dong, X. Y. (2015). From "the disappearance of childhood" to children's "digital enclosure". *Journalism Lover*, (12), 34–37.
[3] Braidotti, R. (2013). *The posthuman*. Polity Press.
[4] Gardner-McTaggart, A., & Blyth, C. (2026). Ontological capture: AI, childhood, and the algorithmic governance of becoming. *AI & Society, 41*(5), 5043–5055.
[5] Pasquale, F. (2015). *The black box society: The secret algorithms that control money and information*. Harvard University Press.
[6] Latour, B. (1987). *Science in action: How to follow scientists and engineers through society*. Harvard University Press.
[7] Lu, P. F. (2025). Aesthetic alienation and reconstruction of cyberspace in the digital intelligence era: Educational intervention based on algorithmic ethics. *Journal of Yanbian Institute of Education*, (2), 17–22.
[8] Wang, Y. L. (2021). Consumed childhood: An analysis of the "child influencer" phenomenon in the short video field. *Radio & TV Journal*, (12), 149–151.
[9] Rosa, H. (2013). *Social acceleration: A new theory of modernity*. Columbia University Press.
[10] Gao, W., & Li, R. C. (2026). The objectification dilemma of children in the digital transformation of education and its alleviation: A review based on Heidegger's philosophy of technology. *Children and Youth Studies*, (3), 15–23.
[11] Heidegger, M. (2016). *Being and time* (J. Y. Chen & Q. J. Wang, Trans.). Commercial Press. (Original work published 1927)
[12] Foucault, M. (1995). *Discipline and punish*. Vintage Books.
[13] Han, B.-C. (2017). *The expulsion of the other*. Polity Press.
[14] Husserl, E. (1960). *Cartesian meditations*. Martinus Nijhoff.
[15] Gao, L. Q. (2025). The dual impact of artificial intelligence technology application on the protection of minors' rights and interests and its legal regulation. *Legal Expo*, (35), 106–108.
[16] Zhou, Z., He, M., Hua, F. R., Wang, L. Y., & Shek, D. T. L. (2026). The intervention effectiveness of school social work on adolescent depression and internet addiction from a preventive perspective: An examination of the "P.A.T.H.S" project. *Social Work and Management*, (4), 34–44.
[17] Wang, Z. B., & Yu, W. (2025). Compressed childhood in an accelerated society: On the temporal roots of problems caused by "double reduction". *Journal of Educational Studies*, (1), 48–61.
[18] Lin, D., & Shen, X. D. (2026). The disappearance and return of the "nearby": Reconstruction of children's growth space in the digital age. *Contemporary Educational Science*, (1), 16–23.

DOI: 10.54254/2753-7048/2026.PE38548

[19] Chen, A. R., & Sun, J. (2024). Mo Deng Xian: An intervention study of time management counseling groups on internet-addicted adolescents: Taking mild internet addiction intervention as an example. *Youth Research and Practice*, (4), 100–107.