**UDC 141.319.8 + 167.7 + 37.01 + 004.8**

# THE HUMAN AS A GENERATOR OF DISTINCTIONS: A PHILOSOPHICAL ANTHROPOLOGY OF THE OBSERVER AND EDUCATION AS THE FIRST INFRASTRUCTURE OF THE AI ERA

(Человек как генератор различений: философская антропология наблюдателя
и образование как первая инфраструктура эпохи ИИ)

**Pankratov Anton Sergeevich**

methodologist of the Observer-Dependent Theory of Everything (ODTOE);
Founder of the Yoo Foundation, Kazan, Russia
E-mail: anton.s.pankratov@gmail.com
ORCID: 0009-0002-4870-2995

## ABSTRACT

This paper addresses the question of who the human is in the age of artificial intelligence by combining philosophical anthropology with the operator apparatus of the Observer-Dependent Theory of Everything (ODTOE). The human is defined as a self-observing observer — a generator of new distinctions and an anchor of meaning for the configurations in which the observer participates: the reflexive fold $\hat{O}(\hat{O})$, coherence $B$ as a property of the pair "observer + configuration", and the accumulation of empirical reinforcement $\Lambda$. The classical answers of philosophical anthropology (excentric positionality, world-openness, unburdening, animal symbolicum, natality, the will to meaning) converge on self-relation, symbol generation, and the initiation of the new; the ODTOE apparatus formalizes these traits. Automation covers the crystallized products of past distinctions — skills as configurations with high inertia; the stable human core shifts toward generating new distinctions, holding coherence across many domains, and retrainability. A profession is read as a temporary configuration with a finite lifetime; the unit of identity shifts from the profession to the coherent trajectory of the observer. Education — the institution engineering $B$ and $\Lambda$ — becomes the first infrastructure of the era. Every major claim is stratified by epistemic level; four falsifiable propositions FP1–FP4 are formulated and docked to the P1–P9 program of the preceding corpus paper as its macro level. All mathematics, physics, and the phenomenology of consciousness are projections of a single primary act of distinction.

**Keywords:** observer, distinction, coherence, philosophical anthropology, artificial in-

telligence, education, lifelong learning, identity, retrainability, ODTOE.

**Аннотация.** Работа отвечает на вопрос о том, кто есть человек в эпоху искусственного интеллекта, средствами философской антропологии и операторного аппарата наблюдатель-зависимой теории всего (ODTOE). Человек определяется как самонаблюдающий наблюдатель — генератор новых различений и якорь смысла конфигураций, в которых он состоит: рефлексивная складка $\hat{O}(\hat{O})$, когерентность $B$ как свойство пары «наблюдатель + конфигурация», накопление эмпирического подкрепления $\Lambda$. Классические ответы философской антропологии (эксцентрическая позициональность, открытость миру, разгрузка, символопорождение, начинание нового, воля к смыслу) сходятся на самоотнесённости, символопорождении и порождении нового; аппарат ODTOE формализует эти черты. Автоматизация охватывает кристаллизованные продукты прошлых различений — навыки как конфигурации с высокой инерцией; устойчивое человеческое ядро смещается к порождению новых различений, удержанию когерентности поверх многих областей и переобучаемости. Профессия трактуется как временная конфигурация с конечным временем жизни; единица идентичности смещается с профессии на когерентную траекторию наблюдателя. Образование — институт инженерии $B$ и $\Lambda$ — выступает первой инфраструктурой эпохи. Каждое крупное утверждение стратифицировано по эпистемическим уровням; сформулированы четыре фальсифицируемых предложения FP1–FP4, состыкованные с программой P1–P9 предшествующей корпусной работы как её макроуровень. Вся математика, физика и феноменология сознания суть проекции единого первичного акта различения.

**Ключевые слова:** наблюдатель, различение, когерентность, философская антропология, искусственный интеллект, образование, непрерывное образование, идентичность, переобучаемость, ODTOE.

# 1 Introduction: displacement anxiety and the actual structure of the shift

Public discussion of artificial intelligence is centred on displacement: which professions will disappear, whom a generative model will replace, how many years this or that occupation has left. The factual picture of the first years of mass adoption looks heterogeneous. Large administrative data from Denmark covering eleven exposed occupations show modest early macro effects: chatbots save about $2.8\%$ of working hours, and statistically significant shifts in earnings and employment over two years are absent [1]. At the same time, erosion is already visible at the entry rung of the career ladder: in the occupations most exposed to AI, employment of workers aged 22–25 has declined by roughly $13\%$ relative to less exposed groups, while the employment of experienced workers in the same occupations remains stable [2]. The normative re-

sponse to these shifts has taken shape globally: the UNESCO recommendation on the ethics of AI codifies the human-centred approach and the protection of human autonomy [3], and the European regulation on AI states as its explicit goal "human-centric and trustworthy" artificial intelligence [4].

Such a picture — fast effects in bounded tasks, small macro effects, erosion of the entry rung, a human-centred normative frame — calls for a question deeper than a list of disappearing professions: what in the human is constitutive, that is, which function stays with the human by the very structure of cognizing systems, and how the profession, creativity, and education are rebuilt around that function. The present paper answers this question along three axes: (1) the human at the centre — a philosophical anthropology of the observer; (2) creativity as the generation of distinctions; (3) education as the first institution of the era.

The instrument is the operator apparatus of ODTOE (Observer-Dependent Theory of Everything) — a metatheoretical framework that parametrizes the space of descriptions through the coherence of the observer; the engineering reading of the apparatus and the metrology of the parameter $B$ have been published earlier [5]. The immediate predecessor of the present paper in the corpus is the model of the coherent dyad of the learner and the AI tutor with interior optima of difficulty and reliance [6]; that work supplies the micro level of a single learning dyad and its metrics. The present article makes a claim of a different storey: a philosophical-anthropological one, about the constitutive function of the human, and an institutional one, about education as the first infrastructure. The dyadic quantities of the predecessor are cited here and are nowhere re-derived.

## 2 The epistemic status of the claims

The paper joins three heterogeneous layers, and honesty requires their explicit stratification. **L1** denotes external verified results: published empirical studies, normative documents, classical philosophical texts. **L2-INVARIANT** denotes structural results of the ODTOE corpus that transfer across domains. **L3** denotes the interpretive vocabulary of the present paper: every unit of the vocabulary carries the status of a **HYPOTHESIS** and is equipped with a falsifier. **PREDICTION** denotes an empirically testable consequence, collected in the program of Section 10.

Two disciplining constraints are fixed at once. The first is the framework relativity of centrality. The thesis of the human at the centre carries in this paper the status of a consequence of the ODTOE axiomatics: in configurations whose goal-setting is assigned to the human, the anchoring of coherence $B$ and of meaning belongs to the goal-setting member of the pair "observer + configuration". This is a disciplined interpretation inside the framework; the paper makes no claim of an empirical proof of human irreplaceability. The second is agnosticism on the question of AI observerhood. The corpus treats the observer without anthropocentrism: the human occupies

a point on a continuous spectrum of observation dimensionality, and the reflexive capacity grows gradually [7]. Whether an AI system can act as an observer in the full sense of the canonical definition remains an open question, placed outside this paper; the exposition describes the distribution of roles in human-goal configurations and is compatible with any future answer to that question.

All cross-domain correspondences of the paper are held as structural analogies at the level of control-parameter topology: what is declared common is the shape of the dependence, while the measured quantities differ. No identification of quantities across the philosophical, the pedagogical, and the operator domains is made here.

# 3 The constitutively human: the answers of philosophical anthropology

Twentieth-century philosophical anthropology accumulated a stable set of answers to the question of the specificity of the human. Six classical anchors form the supporting layer L1.

Plessner defines the human through excentric positionality: a living body is centred in itself, whereas the human takes a position both at the centre of his own life and outside it, observing himself from without [8]. This built-in self-distance is the direct philosophical predecessor of the reflexive fold $\hat{O}(\hat{O})$ formalized in Section 4.

Scheler assigns to the human world-openness: spirit frees the human from bondage to the environment, allowing him to objectify both his own drives and the surroundings themselves [9]. The capacity to make one's own state an object is the same self-distance, taken from the side of the intentional act.

Gehlen describes the human as a "deficient being" (Mangelwesen): the poverty of instinctual equipment is compensated by institutions and technology, which take over routine regulation — unburdening (Entlastung) frees resources for the new [10]. The bridge to the present day is direct: automation continues the line of unburdening, and the institutions that take regularity upon themselves become the condition of human productivity.

Cassirer defines the human as animal symbolicum: between stimulus and response in the human stands the symbolic form — language, myth, science [11]. A symbol is a formed distinction; the calculus of distinctions that begins with the instruction "draw a distinction" was built by Spencer-Brown [12], and the ODTOE corpus inherits the term "distinction" precisely from this line.

Arendt singles out action as the capacity to begin the new: natality means that with every human a new beginning, an initium, enters the world [13]. The initiation of a new series is the dynamic side of the same core that self-distance describes statically.

Frankl fixes the will to meaning: the human is oriented toward meaning, and this orientation is non-delegable — meaning cannot be received ready-made; it can only be discerned and accepted [14].

The synthesis of the section: the classical answers converge on three traits — self-relation (Plessner, Scheler), symbol generation (Cassirer), and the initiation of the new with responsibility for meaning (Arendt, Frankl), under the institutional unburdening of routine (Gehlen). The next section shows that the operator apparatus of ODTOE formalizes all three traits within a single construction.

# 4 The ODTOE observer: the reflexive fold, the anchor of the pair, and the doubt operator

This section assembles the corpus apparatus in use; all content of the section is cited, with no re-derivations. The canonical definition of cognitive coherence is multiplicative over four factors [5]:

$$B(O,C) = F^{w_1} \cdot E^{w_2} \cdot (1-\sigma)^{w_3} \cdot \Lambda^{w_4}, \qquad \textstyle\sum_i w_i = 1, \tag{1}$$

where $F$ is the focus of attention, $E$ is emotional coherence, $\sigma$ is internal contradiction, so that $(1-\sigma)$ is internal consistency, and $\Lambda$ is empirical reinforcement. The quantity $B$ is a property of the pair "observer + configuration": it is defined jointly on $O$ and $C$ and can belong neither to the observer alone nor to the configuration alone [5]. The multiplicative form (1) yields the weak-link property (**L2-INVARIANT**):

$$\sigma \to 1 \;\Rightarrow\; B \to 0 \tag{2}$$

irrespective of the values of $F$, $E$, $\Lambda$ [5].

Reflexive capacity is formalized by folding the observation operator onto itself [7]:

$$\hat{O}(\hat{O}) = \hat{O}', \tag{3}$$

where the refined operator $\hat{O}'$ arises from observing one's own act of observation. Humanity, in corpus terms, is the capacity for a stable reflexive fold (3); this capacity grows gradually along the spectrum of dimensionality $d$ of the observation operator, and the human occupies on this spectrum a point with $d = 3$–$4$, without ontological exceptionality [7]. The phenomenal layer (what it is like to live the fold from within) is held by the corpus at the level of an L3 hypothesis, and the present paper inherits that status.

The dynamics of configurations obeys two corpus laws [5]:

$$T(S) = \frac{T_0}{(1-S)^n}, \qquad v_{\text{reconf}} \propto \frac{1}{I(C)}, \tag{4}$$

where $T$ is the lifetime of a configuration, $S$ is collective coherence, $v_{\text{reconf}}$ is the speed of reconfiguration, and $I(C)$ is the inertia of the configuration. Highly coherent configurations live long; inert ones reconfigure slowly.

The doubt operator is given by the contraction modulus [15]:

$$q(B,S) = B\,S + (1-B)\sqrt{1-S^2}, \tag{5}$$

with a sign reversal of the individual-doubt channel at the threshold $S = 1/\sqrt{2} \approx 0.70710678$: above the threshold, the doubt of a single observer strengthens the stability of the collective configuration, and the operative lever of transition becomes the dispersion of doubt $\mathrm{Var}(\sigma_i)$ [15]. Coherence is bounded from above by the ceiling $S_{\max} = 1 - (\pi - 3)^2 \approx 0.97995152045$: roughly two percent of irremovable doubt forms a latent transition built into any stable reality [15].

The collective storey of the apparatus is supplied by the coherence of a cluster of observers $S_{\text{cluster}}$ with its region of configuration overlap [16] and by the adjusted coherence of a team [17]:

$$S_{\text{adjusted}} = S_{\text{team}} \times \bar{B}, \qquad \bar{B} = \frac{1}{n} \sum_{i=1}^{n} B_i, \tag{6}$$

which exposes phantom coherence — agreement reached around an error, when $S_{\text{team}}$ is high at low $\bar{B}$ [17]. The numerical values of this section reproduce the canonical quantities of the corpus, recomputed to fifty decimal places.

The juxtaposition with Section 3 is direct. The self-relation of the classics is formalized by the fold (3). Symbol generation corresponds to the generation of the distinctions from which configurations are built. The initiation of the new corresponds to reconfiguration (4) with the overcoming of the inertia $I(C)$. The correspondence holds at the level of structural analogy: philosophical categories and operator quantities remain distinct objects.

# 5 An interpretive vocabulary of the era

At the intersection of the anthropological layer and the operator apparatus, the paper introduces an interpretive vocabulary of five units. Each unit carries the status of an L3 **HYPOTHESIS** and is equipped with a falsifier; the summary is given in Table 1.

**V1. A profession is a fixed configuration $C$ with high inertia $I(C)$; a skill is a crystallized product of past distinctions.** A profession, in this reading, is a stable package of distinctions, procedures, and quality criteria, once generated and thereafter reproduced. What is accessible to automation is precisely the crystallized part: that which has already been formed as a repeatable structure.

**V2. Creativity is the primary act of distinction.** Generating a new taxonomy, a new problem statement, a new criterion is an act that changes the very space of configurations; the calculus of distinctions gives it a formal language [12], and the corpus gives it the proto-operator $\hat{O}_0$, prior to any specific orientation of observation [18]. The hypothesis is framework-relative: it describes the distribution of roles in human-goal configurations (see the agnosticism of Section 2).

**V3. Education is coherence engineering.** The product of the institution of education is the observer's capacity to restore $B$ after a change of configuration and to transfer $\Lambda$ across domains; the detailed unfolding is given in Section 9.

**V4. Identity is the coherent trajectory of the observer.** The unit of identity shifts from the profession (a configuration) to the trajectory: a connected sequence of configurations held by one self-observing observer.

**V5. Multifaceted development is a portfolio of configurations of the observer with a shared core $\Lambda$.** The breadth of the portfolio has an interior optimum: both mono-profile narrowness and dispersal reduce the stability of the trajectory. An early formulation in terms of a wide $S$-cluster was deliberately declined: $S$ is a property of a multi-observer system, and applying it to the breadth of a single observer would be a category error. The correspondence to the topology of the interior optimum $\rho^*$ of the dyadic model [6] is held as a structural analogy of the shape of the landscape, without identification of quantities.

Table 1: An interpretive vocabulary of the AI era (all units are level L3; the status of each is a HYPOTHESIS with a falsifier).

| Unit | ODTOE reading | Falsifier |
|---|---|---|
| V1 profession | A configuration with high $I(C)$; a skill is a crystallized distinction | The relevance period of skills is longer than a typical career in most professions |
| V2 creativity | The primary act of distinction | Routine autonomous generation by AI of new distinctions accepted by communities without human anchoring |
| V3 education | Engineering of $B$ and $\Lambda$ | Interventions on the factors of $B$ without a content advantage leave the speed of retraining unchanged |
| V4 identity | The coherent trajectory of the observer | Stability of profession predicts employment and well-being better than measures of trajectory coherence |
| V5 multifacetedness | A portfolio of configurations with a shared core $\Lambda$ | A monotone dependence of outcomes on portfolio breadth in either direction |

# 6 The asymmetry of complementarity: anchoring remains with the observer

The empirics of the first years of generative AI form a convergent pattern, which the paper labels N1. In bounded, well-specified tasks, AI compresses skill gaps from below

upward. In a controlled experiment with professional writing tasks, completion time fell by $40\%$, quality rose by $18\%$, and the largest gains went to the weaker performers [19]. In a field experiment with consultants, inside the "jagged frontier" of the model's capabilities the lower half by skill gained $43\%$ in quality; beyond the frontier of capabilities, the correctness of decisions fell by $19$ percentage points [20]. Among customer-support operators, productivity rose by $15\%$ on average, with the maximum among novices [21]. In open-ended tasks involving judgment the pattern is mirrored: for Kenyan entrepreneurs an AI assistant raised the results of the strong by about $20\%$ and lowered the results of the weak by about $10\%$ [22], and the erosion of the entry rung of employment [2] shows the same mechanism at the macro level: what is automated is the crystallized part of the work with which novices used to begin.

Reading the pattern through ODTOE brings out the asymmetry of roles in the pair of the human and AI. What remains with the human in these studies coincides with the functions of the reflexive observer: the choice of problem statement, judgment about the boundary of applicability, responsibility for accepting a distinction — action in Arendt's sense [13], taken in a production context. The human acts as the highly coherent reflexive anchor of the pair and the holder of the doubt dispersion $\mathrm{Var}(\sigma_i)$ — the very lever that, by Section 4, governs transitions. AI acts as a fast co-regulator of the feedback cycle: the corpus model of multi-agent configurations fixes the cycle length $\tau_{\text{cycle}}$ as the primary quantity of the speed of cognition [23],

$$v_{\text{conv}} = \frac{\alpha}{\tau_{\text{cycle}} \cdot (I(C) + \varepsilon)}, \tag{7}$$

and a generative model radically shortens $\tau_{\text{cycle}}$ in (7) for routine iterations. The failure signature of the AI co-regulator is known to the corpus as the ideal error: a coherent, convincing, and systemically wrong outcome — plausible non-factuality, sycophancy, over-optimization of a metric past the Goodhart turn [24]. The share of reliance on the co-regulator has an interior optimum $S^*$, established for the learning dyad in the predecessor work [6]; both under-use and full delegation lower the joint result.

The risk of full delegation has its own empirical line: in a survey of knowledge workers, growth of trust in generative AI correlates with a decline in self-assessed critical thinking and with a transfer of effort from execution to verification [25]. Unburdening in Gehlen's sense is productive while what is unburdened is routine; unburdening of judgment itself dismantles the anchoring function of the observer.

The institutional conclusion from the asymmetry has been formulated in the economic literature as the "Turing trap": imitation of the human and substitution form only one of the design paths, and the augmentation path, which strengthens human judgment, is chosen at the level of the design of systems and institutions [26]. The direction of technological progress is a matter of societal choice, fixed by the distribution of bargaining power [27]; a generative model meanwhile remains a mirror of accumulated human distinctions and inherits their limitations [28]. The pattern N1 carries level L1; its operator reading carries the level of a **HYPOTHESIS**, with consequences collected in FP2.

# 7 Creativity as the primary act of distinction

The psychometric line of comparing the human and AI yields results that at first sight point in different directions. GPT-4 lands in the top percentile of the standard Torrance test of divergent thinking [29]; at the same time, the best humans retain superiority over models in divergent alternative-uses tasks [30]. In short-fiction tasks, generative support raises the individual rating of creativity and lowers the collective diversity of texts — a social dilemma: each writer's local gain is paid for by the homogenization of the common field [31]. The research agenda is meanwhile shifting from substitution to human-machine co-creativity [32]. In the theory of creativity the criterion itself shifts in parallel: the definition of creativity is extended by requirements of intentionality and authenticity of process, and machine output is classified as artificial creativity [33].

The operator reading resolves the apparent contradiction. Psychometric tests measure combinatorial output inside already given distinctions: the task space, the originality criteria, and the very frame of the test are set in advance. The primary act is the generation of a new distinction that changes the space of tasks: the drawing of a boundary in the sense of the calculus of forms [12], the work of the proto-operator $\hat{O}_0$ prior to any fixed orientation [18]. The corpus constraint D-Prot fixes that every transition in the dimensionality of observation opens a class of configurations inaccessible at the previous level [7]; the generation of a distinction is a micro-step of the same type: after it, tasks appear that previously did not exist. The stability of such renewal requires a counter-gradient and metric plasticity: the quality metric must renew itself at the speed of environmental change, otherwise it turns into an attack surface [24].

The synthesis, labelled N2: the human core of creativity relocates from the originality of output to intention, meaning, and the generation of diversity. Combinatorial originality within a given frame is already demonstrated by the machine [29]; holding the diversity of the field [31], choosing the frame, and bearing responsibility for accepting a new distinction remain functions of the reflexive anchor of the pair — here the line of Arendt and Frankl (the initium and the non-delegability of meaning, Section 3) meets the formalism of the fold (3). The status of the human-specificity of this core is the framework-relative **HYPOTHESIS** V2 with the falsifier from Table 1.

# 8 The profession as a temporary configuration

The arithmetic of the shift is simple. By the estimate of the report on the future of jobs, $39\%$ of workers' core skills will change by 2030 [34]. The length of working life is meanwhile growing: the hundred-year life makes a career of fifty and more years, composed of many stages, the norm [35]. Combining the two numbers yields a structural conclusion: the lifetime of the profession-configuration is shorter than the trajectory of the worker, and the change of configurations becomes the expected regime. The task model of automation refines the mechanism: tasks are automated, machines and humans redistribute tasks between themselves, and professions are recomposed around

the comparative advantages remaining with the human [36].

Career theory registered this regime before any AI. The protean career describes a trajectory governed by the person and the person's own values, with psychological success as the criterion of the path [37]. The T-shaped specialist model joins depth in one domain with a broad band of transfer [38]; in the terms of vocabulary unit V5, the band of transfer is the shared core $\Lambda$ of the portfolio of configurations.

The operator reading assembles these lines. A change of profession is a reconfiguration whose speed is inverse to the inertia of the configuration, by the law (4): the more rigidly the skill package is crystallized, the costlier the transition. Retrainability, in turn, runs into the phase of doubt: the threshold $S = 1/\sqrt{2}$ of the modulus (5) explains why an observer inside a highly coherent professional paradigm is almost incapable of unlearning it alone — above the threshold, individual doubt only strengthens the configuration, and the operative lever becomes the dispersion of doubt in the collective together with an institutionally organized transition [15]. The empirical program of retraining agrees with this topology in its timing: the meta-analysis of active labour-market programs shows that the effects of retraining programs appear on a horizon of two to three years and grow with time [39].

Vocabulary unit V4 completes the section: with configurations shorter than the trajectory, the unit of identity is the trajectory itself — the connectedness of the self-observing observer across successive configurations. The continuity of the transition is guaranteed by the corpus axiomatics: a transition is a continuous overcoming of a barrier, without a rupture of the observer [15]. The formulations of the section carry level L1 in the empirical part and the level of a **HYPOTHESIS** in the vocabulary part; the testable consequences are collected in FP1 and FP3.

# 9 Education as the first infrastructure of the era

The institutional turn to lifelong education took shape long ago: the Delors report codified the four pillars — learning to know, learning to do, learning to live together, learning to be [40]; the OECD learning compass puts the agency of the learner and transformative competencies at the centre [41]; the UNESCO guidance on generative AI in education requires human-centred application and the protection of the learner's agency [42]. The philosophy of education specifies the non-substitutable function: subjectification — becoming the subject of one's own life — is irreducible to the transmission of qualifications and to socialization [43]. The Bildung line formulates the counter-risk of the era: when the very acts of formulating and judging are delegated to a generative model, what is outsourced is the very thinking whose formation constitutes the meaning of education [44].

Gehlen's bridge gives these observations an institutional form. Institutions unburden the observer from routine regulation [10]; in an economy of short configurations, the main regular load becomes reconfiguration itself — and education turns into

the institution that unburdens the transition: taking upon itself the organization of the doubt phase, the restoration of coherence, and the transfer of experience.

Hence vocabulary unit V3 in unfolded form: education is the engineering of $B$ and $\Lambda$ — training the focus of attention $F$, resolving internal contradiction $\sigma$ in place of suppressing it (the weak-link property (2) makes precisely $\sigma$ the priority target of the institution), accumulating transferable empirical reinforcement $\Lambda$, and restoring coherence (1) after a change of domain. The micro level of this engineering is already unfolded in the corpus: the methodology of coherent education [45] and the dyadic model with interior optima of difficulty and reliance [6] describe a single learning system and a single dyad. The present paper makes a claim one storey higher — an institutional-anthropological one: the product of the institution of education in the AI era is the retrainable observer, that is, a trajectory with restorable coherence.

The thesis of the first infrastructure can now be stated precisely. Infrastructure is what makes the functioning of the remaining systems possible: roads move goods, networks move data. Education moves the observer himself — it transfers the observer between configurations while preserving the connectedness of the trajectory. In an economy where configurations live shorter than trajectories, the institution of reconfiguration logically precedes the remaining institutions: without it, no one is left to coherently occupy positions in all the other systems. The primacy here is logical; the chronological order of institution-building remains an empirical question. The status of the thesis is an L3 **HYPOTHESIS**, whose consequences are operationalized in FP1 and FP3.

# 10 Testable propositions

The program P1–P9 of the predecessor corpus work operationalizes the micro level of the learning dyad [6]. The four propositions of the present paper form the macro level — the level of the trajectory and the institution; the formulations of P1–P9 are nowhere reused. The summary is given in Table 2.

**FP1 (retrainability versus the stock of qualifications).** In longitudinal career data, metrics of retrainability — time to competence in a new domain, transfer of $\Lambda$ across domains, speed of restoring $B$ after a change of domain — predict the stability of employment and income after AI-driven task shifts more strongly than the accumulated stock of qualifications. Falsifier: dominance of the stock of qualifications in most sectors. **PREDICTION**.

**FP2 (adjusted coherence of production human-AI teams).** In working production teams of humans and AI agents, the adjusted coherence $S_{\text{adjusted}}$ of formula (6), which removes phantom coherence [17], predicts the quality of the result more strongly than raw consensus measures. The context is production, in contrast to the tutoring dyad of the predecessor. Falsifier: raw consensus predicts quality with no loss of accuracy. **PREDICTION**.

**FP3 (managed doubt in retraining).** Retraining programs with an institutionalized phase of managed doubt — a deliberate raising of $\sigma$ on the obsolete configuration with a subsequent re-anchoring of $B$ on the new one — converge to competence faster than programs that conserve the established self-assessment. The topology of the phase is given by the doubt operator (5) with the threshold $S = 1/\sqrt{2}$ and the lever $\mathrm{Var}(\sigma_i)$ [15]. Falsifier: equal or better convergence of doubt-suppressing programs. **PREDICTION**.

**FP4 (interior optimum of portfolio breadth).** Career outcome as a function of the breadth of the portfolio of configurations — the entropy of the portfolio weighted by domain distance — is single-peaked: the interior maximum lies between monoprofile narrowness and dispersal. The correspondence to the interior optimum $\rho^*$ of the dyadic model [6] is held as a structural analogy of the shape of the landscape, without identification of quantities. Falsifier: a monotone dependence of the outcome on breadth in either direction. **PREDICTION**.

Table 2: The FP1–FP4 validation program: the macro level of the trajectory and the institution (tests to be run; no correspondence is declared confirmed).

| Prop. | Observable | Falsifier | Level |
|---|---|---|---|
| FP1 | Retrainability metrics versus the stock of qualifications in longitudinal data | The stock of qualifications dominates in most sectors | PREDICTION |
| FP2 | $S_{\text{adjusted}}$ versus raw consensus in production teams | Raw consensus predicts with no loss of accuracy | PREDICTION |
| FP3 | Convergence of programs with a managed-doubt phase | Doubt-suppressing programs converge faster or equally fast | PREDICTION |
| FP4 | Career outcome as a function of portfolio breadth | A monotone dependence in either direction | PREDICTION |

Docking of the levels: P1–P9 test the optima and metrics of a single dyad; FP1–FP4 test the trajectory of the observer and the institution of reconfiguration. Confirmation of the micro level with failure of the macro level localizes the error in the institutional generalization; the reverse picture localizes it in the dyadic model.

# 11 Honest limitations

First. The centrality of the human in this paper is framework-relative: it follows from the ODTOE axiomatics for human-goal configurations and carries the status of a disci-

plined interpretation. Second. On the question of the observer status of AI systems the paper is agnostic; vocabulary unit V2 is formulated with a falsifier that allows revision. Third. Part of the empirical support consists of working papers [1, 2, 20, 22]: their results may change in peer review, and the weight of the corresponding claims should be considered preliminary. Fourth. The cross-domain correspondences of the paper are structural analogies at the level of control-parameter topology; identification of philosophical, pedagogical, and operator quantities occurs nowhere. Fifth. The models $B$ (1) and $T(S)$ (4) have been published earlier; the novelty of the paper lies in the anthropological synthesis, the change of the unit of identity, and the FP1–FP4 program. Sixth. The psychometrics of creativity measures a bounded construct; this limitation extends to the human-AI comparisons of Section 7, including the results that speak in favour of the human.

# CONCLUSION

The AI era makes manifest the constitutive function of the human of which philosophical anthropology spoke long before the first neural networks: the generation of distinctions and the anchoring of meaning remain with the self-observing observer. Of the practical consequences of this paper we single out one: the unit of identity shifts from the profession to the coherent trajectory, and education — the institution that restores the coherence of the observer across changes of configuration — thereby acquires the status of the first infrastructure. The test of this thesis is set by the program FP1–FP4.

# References


[1] Humlum A., Vestergaard E. Still Waters, Rapid Currents: Early Labor Market Transformation under Generative AI. NBER Working Paper No. 33777. Cambridge, MA: National Bureau of Economic Research, 2025. (Working paper). URL: https://www.nber.org/papers/w33777.

[2] Brynjolfsson E., Chandar B., Chen R. Canaries in the Coal Mine? Six Facts about the Recent Employment Effects of Artificial Intelligence. Stanford Digital Economy Lab Working Paper. Stanford, 2025. (Working paper). URL: https://digitaleconomy.stanford.edu/publications/canaries-in-the-coal-mine/.

[3] UNESCO. Recommendation on the Ethics of Artificial Intelligence. Doc. SHS/BIO/PI/2021/1. Paris: UNESCO, 2021. URL: https://unesdoc.unesco.org/ark:/48223/pf0000381137.

[4] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intel-

ligence Act) // Official Journal of the European Union. 2024. OJ L, 12.07.2024. URL: https://eur-lex.europa.eu/eli/reg/2024/1689/oj.

[5] Pankratov A. S. ODTOE as an engineering framework for the coherence of technical systems: operator formalism, $B$-parameter metrology, and applications in cyber-physical, multi-agent, and AI systems // Universum: Technical Sciences. 2026. No. 6(147). P. 70–73. URL: https://7universum.com/ru/tech/archive/item/22875.

[6] Pankratov A. S. Coherence of the Human–AI Learning Dyad in Adaptive Learning: the Zone of Proximal Development as an Interior Optimum of the Control Parameter. Working preprint of the ODTOE corpus, 2026. [Load-bearing: the dyadic optima $\rho^*$ and $S^*$, the mastery gap, the ideal error of the dyad, the six proxy metrics, the P1–P9 program.]

[7] Pankratov A. S. The Observer from Quark to Consciousness: ODTOE and Evolutionary Epistemology. Working preprint of the ODTOE corpus, 2026. [Load-bearing: the recursion $\hat{O}(\hat{O}) = \hat{O}'$, the dimensionality $d$ of the observation operator, the graduality of reflexivity, the absence of anthropocentrism, the D-Prot constraint.]

[8] Plessner H. Levels of Organic Life and the Human: An Introduction to Philosophical Anthropology / transl. M. Hyatt. New York: Fordham University Press, 2019 (first German edition — 1928).

[9] Scheler M. The Human Place in the Cosmos / transl. M. S. Frings. Evanston: Northwestern University Press, 2009 (first German edition — 1928).

[10] Gehlen A. Man: His Nature and Place in the World / transl. C. McMillan, K. Pillemer. New York: Columbia University Press, 1988 (first German edition — 1940).

[11] Cassirer E. An Essay on Man: An Introduction to a Philosophy of Human Culture. New Haven: Yale University Press, 1944.

[12] Spencer-Brown G. Laws of Form. London: George Allen and Unwin, 1969.

[13] Arendt H. The Human Condition. 2nd ed. Chicago: University of Chicago Press, 1998 (first edition — 1958).

[14] Frankl V. E. Man's Search for Meaning. Boston: Beacon Press, 2006 (first edition — 1946).

[15] Pankratov A. S. Doubt as the Control Operator of Reality-Transition: Collective Coherence as the Manipulated Variable of the Self-Observation Fixed Point. Working preprint of the ODTOE corpus, 2026. [Load-bearing: $q(B, S) = BS + (1 - B)\sqrt{1 - S^2}$, the threshold $S = 1/\sqrt{2}$, the lever $\mathrm{Var}(\sigma_i)$, the ceiling $S_{\max} = 1 - (\pi - 3)^2$, the transition-continuity axiom.]

[16] Pankratov A. S. Earth as a Cluster of Observers: Reconciling Universes in ODTOE. Working preprint of the ODTOE corpus, 2026. [Load-bearing: $S_{\text{cluster}}$, the region of configuration overlap, resonance bridges.]

[17] Pankratov A. S. Multi-Agent Coherence in Artificial Intelligence Systems: An Experimental Study of Five Roles, Language Architecture, and Self-Organization Mechanisms Based on the ODTOE Formalism. Working preprint of the ODTOE corpus, 2026. [Load-bearing: $S_{\text{adjusted}} = S_{\text{team}} \times \bar{B}$ (formula II.3), phantom coherence.]

[18] Pankratov A. S. Primordial Distinction in ODTOE: the Mechanism of Spontaneous Symmetry Breaking and KAM Selection of the $\varphi$-Resonance. Working preprint of the ODTOE corpus, 2026. [Load-bearing: the proto-operator $\hat{O}_0$, the genesis of the first distinction.]

[19] Noy S., Zhang W. Experimental evidence on the productivity effects of generative artificial intelligence // Science. 2023. Vol. 381, No. 6654. P. 187–192. DOI: 10.1126/science.adh2586.

[20] Dell'Acqua F., McFowland E., Mollick E. R. et al. Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality. Harvard Business School Working Paper No. 24-013. Boston: Harvard Business School, 2023. (Working paper). DOI: 10.2139/ssrn.4573321.

[21] Brynjolfsson E., Li D., Raymond L. Generative AI at Work // The Quarterly Journal of Economics. 2025. Vol. 140, No. 2. P. 889–942. DOI: 10.1093/qje/qjae044.

[22] Otis N., Clarke R. P., Delecourt S., Holtz D., Koning R. The Uneven Impact of Generative AI on Entrepreneurial Performance. SSRN Working Paper No. 4671369. 2024. (Working paper). DOI: 10.2139/ssrn.4671369.

[23] Pankratov A. S. Meta-Epistemology of Small Groups: the Feedback Cycle as the Primary Operator of Knowledge-Production in Multi-Agent Configurations. Working preprint of the ODTOE corpus, 2026. [Load-bearing: $\tau_{\text{cycle}}$ as the primary quantity, $v_{\text{conv}} = \alpha/(\tau_{\text{cycle}}(I(C) + \varepsilon))$ (formula F3).]

[24] Pankratov A. S. Optimal Control of Coherent Media: A Single Control Parameter, the Counter-Gradient, and the Signature of the Ideal Error. Working preprint of the ODTOE corpus, 2026. [Load-bearing: the ideal error as a coherent, convincing, and systemically wrong outcome; the counter-gradient $\rho^* > 0$; metric plasticity $dM/dt \geq dE/dt$.]

[25] Lee H.-P., Sarkar A., Tankelevitch L. et al. The Impact of Generative AI on Critical Thinking: Self-Reported Reductions in Cognitive Effort and Confidence Effects From a Survey of Knowledge Workers // Proceedings of the 2025 CHI Conference

on Human Factors in Computing Systems. New York: ACM, 2025. P. 1–22. DOI: 10.1145/3706598.3713778.

[26] Brynjolfsson E. The Turing Trap: The Promise & Peril of Human-Like Artificial Intelligence // Daedalus. 2022. Vol. 151, No. 2. P. 272–287. DOI: 10.1162/daed_a_01915.

[27] Acemoglu D., Johnson S. Power and Progress: Our Thousand-Year Struggle over Technology and Prosperity. New York: PublicAffairs, 2023.

[28] Vallor S. The AI Mirror: How to Reclaim Our Humanity in an Age of Machine Thinking. New York: Oxford University Press, 2024.

[29] Guzik E. E., Byrge C., Gilde C. The originality of machines: AI takes the Torrance Test // Journal of Creativity. 2023. Vol. 33, No. 3. Art. 100065. DOI: 10.1016/j.yjoc.2023.100065.

[30] Koivisto M., Grassini S. Best humans still outperform artificial intelligence in a creative divergent thinking task // Scientific Reports. 2023. Vol. 13. Art. 13601. DOI: 10.1038/s41598-023-40858-3.

[31] Doshi A. R., Hauser O. P. Generative AI enhances individual creativity but reduces the collective diversity of novel content // Science Advances. 2024. Vol. 10, No. 28. Art. eadn5290. DOI: 10.1126/sciadv.adn5290.

[32] Rafner J., Beaty R. E., Kaufman J. C., Lubart T., Sherson J. Creativity in the age of generative AI // Nature Human Behaviour. 2023. Vol. 7. P. 1836–1838. DOI: 10.1038/s41562-023-01751-1.

[33] Runco M. A. AI can only produce artificial creativity // Journal of Creativity. 2023. Vol. 33, No. 3. Art. 100063. DOI: 10.1016/j.yjoc.2023.100063.

[34] World Economic Forum. The Future of Jobs Report 2025. Geneva: WEF, 2025. URL: https://www.weforum.org/publications/the-future-of-jobs-report-2025/.

[35] Gratton L., Scott A. The 100-Year Life: Living and Working in an Age of Longevity. London: Bloomsbury, 2016.

[36] Autor D. H. Why Are There Still So Many Jobs? The History and Future of Workplace Automation // Journal of Economic Perspectives. 2015. Vol. 29, No. 3. P. 3–30. DOI: 10.1257/jep.29.3.3.

[37] Hall D. T. The protean career: A quarter-century journey // Journal of Vocational Behavior. 2004. Vol. 65, No. 1. P. 1–13. DOI: 10.1016/j.jvb.2003.10.006.

[38] Guest D. The hunt is on for the Renaissance Man of computing // The Independent (London). 1991. 17 September.

[39] Card D., Kluve J., Weber A. What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations // Journal of the European Economic Association. 2018. Vol. 16, No. 3. P. 894–931. DOI: 10.1093/jeea/jvx028.

[40] Delors J. et al. Learning: The Treasure Within. Report to UNESCO of the International Commission on Education for the Twenty-first Century. Paris: UNESCO Publishing, 1996.

[41] OECD. OECD Future of Education and Skills 2030: OECD Learning Compass 2030. A Series of Concept Notes. Paris: OECD, 2019. URL: https://www.oecd.org/education/2030-project/.

[42] Miao F., Holmes W. Guidance for generative AI in education and research. Paris: UNESCO, 2023. URL: https://unesdoc.unesco.org/ark:/48223/pf0000386693.

[43] Biesta G. World-Centred Education: A View for the Present. New York: Routledge, 2022. DOI: 10.4324/9781003098331.

[44] Costa C., Murphy M. Generative artificial intelligence in education: (what) are we thinking? // Learning, Media and Technology. 2025. P. 1–12. DOI: 10.1080/17439884.2025.2518258.

[45] Pankratov A. S. Coherent Education: Theory and Methodology of Building Learning Systems Based on the Observer-Dependent Theory of Everything // Collection of Papers MK-2677. Moscow: Nauka i Prosveshchenie, 2026. P. 80–85. URL: https://naukaip.ru/wp-content/uploads/2026/05/MK-2677.pdf.