【Articles】

Writing Toward the Incalculable: Academic Writing, AI, and the Pharmacology of Language Education in the Japanese University

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Contents

Introduction
1. Technical Becoming and Its Discontents: Stiegler, Anders, and the Current Moment
   - *1.1 Stiegler's Pharmacology and the Question of Technics*
   - *1.2 Long Circuits of Transindividuation and Their Disruption by Artificial Intelligence*
   - *1.3 Günther Anders and the Promethean Gap*
2. The Japanese Context: Neoliberalism, Anaesthesia, and the Impoverished Milieu
   - *2.1 Language Learning and Promethean Shame*
   - *2.2 Anaesthesia and the Proletarianization of Sensibility*
3. Writing as Transindividuation: The Irreplaceable Dimension
   - *3.1 Academic Writing as Community of Practice*
   - *3.2 The Hypomnesic Milieu and the Politics of Memory*
4. Considerations for Instructors: Framing Practice in a Pharmacological Milieu

Conclusion: Writing Toward the Incalculable

Abstract

This paper examines the relevance and future of academic writing in foreign language education, specifically English as a Foreign Language (EFL) in the Japanese university, in the age of artificial intelligence (AI). The paper draws upon Bernard Stiegler's philosophy of technics, transindividuation (becoming other), and pharmacology, supplemented by Günther Anders' concept of the 'Promethean gap' (*prometheisches Gefälle*). Together, these frameworks illuminate the profound threat that the rapid adoption of AI writing tools poses to what Stiegler terms 'long circuits of transindividuation' (the dialogical, intergenerational processes of psychosocial becoming through which individuals, communities, and cultures are formed

and transformed). However, the pharmacological ambivalence of AI (simultaneously cure and poison) demands that educators resist both uncritical enthusiasm and fatalistic rejection. Against an academic culture in Japan already deeply shaped by neoliberal instrumentalism and the commodification of knowledge, AI risks accelerating the outsourcing of the very faculties that language learning at its best seeks to cultivate: aesthetic sensibility, critical imagination, and communal investment (Greene, 1995). The paper proposes that academic writing, reconceived not as a skills-based exercise but as a situated practice of inscription, dialogue, and transindividuation, retains an irreplaceable role in the Japanese university, and offers a philosophical reframing of its purposes and possibilities in the age of machine writing.

Keywords: *academic writing, EFL, Japan, artificial intelligence, Stiegler, transindividuation, Promethean gap, pharmacology, proletarianization, aesthetic formation*

Introduction

We all recognize that there is something uncanny about the moment a student submits an essay or research paper we highly suspect is composed, in whole or in substantial part, by an artificial intelligence. Not because such a scheme is new, as students have always tried to find ways to circumvent the labor of writing, but because the specific character of this circumvention exposes, with unusual clarity and alarm, a set of questions that have long lurked beneath the surface of academic writing pedagogy. What is such writing for? Who writes, and for whom? And what, if anything, is lost when the articulation of thought is outsourced to a machine that, to the best of our knowledge, does not actually think?

It would be a mistake for educators to consider these questions as merely pedagogical. They are more fundamentally philosophical, in the deepest sense, touching as they do on the nature of language, memory, identity, and the social conditions of meaning-making, or *semiosis*. These questions have, in fact, been approached before, in relation to earlier communicative technologies from the printing press to the word processor to the internet, and have more recently found one of their most sustained and searching treatments in the work of the late French philosopher Bernard Stiegler. What distinguishes the current moment is the qualitative leap represented by large language models (LLMs). AI systems are now capable of producing, at scale and on demand, academic prose indistinguishable in form from that produced by human writers, and often surpassing it in fluency if not in substance or stylistic individuality. This is not simply a new tool in the hands of students; it is a new *kind* of tool, one that operates precisely on the terrain of language, argumentation, and inscription that academic writing has always claimed as its own.

The context in which this paper situates its inquiry is that of English as a Foreign Language (EFL) in the Japanese university. That context is instructive, not because the problems

it presents are unique, but because they are, in some respects, unusually concentrated. EFL in the Japanese university has long been shaped by a confluence of forces: neoliberal instrumentalism, government policy oriented toward economic competitiveness, a preoccupation with measurable outcomes and standardized testing, and a deeply ambivalent relationship between the Japanese educational imaginary and the English-speaking world (Seargeant, 2009; Toh, 2016). All of these have tended to hollow out academic writing of the very purposes and investments that make it meaningful. Into this already impoverished landscape, AI writing tools now arrive as both a symptom and a frightening accelerant.

The argument of this paper proceeds in four movements. The first section revisits and updates the philosophical framework developed in previous literature on this theme, drawing on Stiegler's account of technics, pharmacology, and transindividuation, and supplementing it with Günther Anders' concept of the 'Promethean gap' and its implications for the human relationship to technological production. The second examines the specific risks that AI writing tools pose to what Stiegler calls 'long circuits of transindividuation' in the domain of language education, with particular attention to the proletarianization of aesthetic and noetic (or thinking) faculties and the broader anaesthetization of the learner's capacity for individuation, or becoming. The third returns to the question of academic writing, its purposes, its possibilities, and its irreplaceable dimensions, and argues for a reconception of it as a practice of inscription, community, and care. The fourth and final section draws these threads together into a set of philosophical orientations for educators navigating this pharmacological terrain, concluding with a list of practical considerations for instructors of academic writing in English at Japanese universities.

1. Technical Becoming and Its Discontents: Stiegler, Anders, and the Current Moment

1.1 Stiegler's Pharmacology and the Question of Technics

What Stiegler insists on, against every nostalgic humanism, is that there is no humanity prior to its technical mediation. There is no originary self that subsequently acquires tools: rather, being human in the psychosocial sense is an inhabited dynamic of becoming that is constituted through tools, inscriptions, and exteriorized memories from the start. Stiegler traces this notion back to the ancient Greek myth of Prometheus and Epimetheus, in which humanity, forgotten by Epimetheus in the distribution of qualities to living beings, is left without natural essence—a lack that Prometheus compensates for by stealing fire and technical skill (*technē*) from the gods. Following Simondon's (1989) account of individuation (the differentiation of a living being through its engagement with a milieu and its technologies) Stiegler extends this becoming to the psychic and the collective at once. We are not first individuals who then form communities. Rather, we individuate primarily through the

communities and technical systems that shape us, and they are transformed in turn. This is what 'transindividuation' names: not a social process supplementing an already-formed self, but the open-ended, mutually constitutive becoming of self, community, and the technical milieu they share (Stiegler, 2011, 2013, 2015).

Central to this account is the concept of the *pharmakon*, borrowed from Derrida's reading of Plato's *Phaedrus*. For Stiegler, every technology is both remedy and poison. It extends human capacity while simultaneously creating new dependencies and vulnerabilities. Writing, Plato's Socrates lamented, would destroy memory by providing an external substitute for it, an outsourcing of the mind and human discourse. The printing press, the telephone, cinema, television, the internet: each was greeted in turn with analogous anxieties, and each did indeed transform the conditions of human experience in ways that were both enabling and constraining. The point is not to choose one side of the pharmakon over the other (i.e., to disregard either the positive or the negative), but to engage with its bifurcated nature attentively and critically, to *take care* of technology, as Stiegler (2013) puts it, in a double sense: to care for it and to exercise care in relation to it.

The specific danger that Stiegler identifies in the current epoch is not technology as such, but a particular form of its deployment: the reduction of human faculties to automatized, calculable functions in the service of short-term neoliberal economic interests. This is what he describes as proletarianization, a term borrowed from Marx but extended beyond its original economic register to encompass the erosion of *savoir faire* (practical know-how), *savoir vivre* (knowing how to live), and *savoir théorique* (theoretical knowledge). In the domain of education, proletarianization manifests as the commodification of knowledge. It is the subordination of learning to measurable outcomes, the reduction of meaning-making to transferable skills, and the replacement of meaningful intellectual engagement with the production of calculable results (Stiegler, 2015). This proletarianization, Stiegler warns, is accelerated by technologies that automate not just physical labor but cognitive and affective practices, a warning that now seems prescient in relation to AI writing tools.

Also central to Stiegler's account, and directly relevant to language education, is his understanding of the *aesthetic*. Following a broad Kantian and post-Kantian tradition but recasting it in the light of his philosophy of technics, Stiegler conceives of the aesthetic not reductively as a domain of art appreciation but as the very capacity for sensory and affective attunement, the ability to be moved, to care, to invest in the world and its objects, to form what he calls tertiary retentions through shared aesthetic experience (Stiegler, 2017). Digital capitalism, Stiegler argues, systematically anaesthetizes this capacity, producing what he terms a proletarianization of sensibility in which the aesthetic faculties are progressively colonized by algorithmically curated consumption, reducing lived experience to a series of managed stimuli rather than genuinely open encounters with the world. This dimension of Stiegler's thought, linking aesthetic formation to psychosocial individuation, is of particular

importance for the present argument, because it allows us to see what is at stake in AI-assisted language learning not only as a question of academic integrity but as a question of what kind of *being* the learner is becoming, or wanting to become. The deepest question a technology poses, for both Stiegler and Vallor (2016, 2024), is not what it produces but what it *makes* of us: what kinds of character, attention, and flourishing it cultivates or forecloses, and whether it supports or diminishes the possibility of individuation. This convergence between Stiegler's savoir vivre and Vallor's ontological approach to technology ethics offers a particularly generative framework for thinking about writing pedagogy. This is not, it should be noted, an exclusively philosophical argument. Writing from within higher education studies rather than the philosophy of technology, Barnett (2004) arrives at a strikingly similar insistence, calling for an 'ontological turn' in higher education that reimagines its purposes around "the transformation of human *being*" (p. 257, italics mine) rather than strictly the production of competencies.

1.2 Long Circuits of Transindividuation and Their Disruption by Artificial Intelligence

Of all the concepts in Stiegler's philosophical architecture, perhaps none is more directly relevant to the question of AI writing assistance than his sustained distinction between long and short circuits of transindividuation. To understand what is at stake, it is necessary to dwell on this distinction at some length.

Stiegler inherits from the philosopher Gilbert Simondon (1989) the understanding that individuation, the dynamics by which a being becomes itself, is never solitary. The psychic individual individuates only in and through collective individuation. The two processes are co-constitutive and thus transindividuating. What Stiegler adds to Simondon's account is the indispensable role of technical objects, of tools, inscriptions, and mnemotechniques (the technologies of memory), as the material supports through which the transindividuating relationship between the psychic and the collective is organized and transmitted. Language is itself one such technical object, as are books, curricula, traditions of argument and commentary, and the essay form itself.

Long circuits of transindividuation, in Stiegler's vocabulary, are the extended, intergenerational processes through which knowledge, *care*, and savoir vivre are transmitted, contested, and transformed across time. They are circuits in the sense that they form feedback loops. With regard to academic writing, a student reads a text, is changed by it, writes in response to it, and in so doing contributes something new to the tradition that the text belongs to (see also Bakhtin, 1981). A teacher, shaped by decades of reading and writing and by the inherited wisdom of a discipline, transmits not just information but a way of inhabiting questions, a set of dispositions, and a cultivated attentiveness. These circuits are slow, often challenging, and marked by failure and revision. They require what Stiegler (2012) refers to

as *attention* in its fullest sense: not mere alertness or vigilance, which are instinctual, but the cultivated, educationally formed capacity to attend to something over time, to sustain a relationship with a question or a text or another mind across the interruptions and distractions of ordinary life.

Short circuits, by contrast, bypass this formative process. They deliver the output without the experience, the answer without the inquiry, the fluency without the investment. Stiegler's model here draws on his analysis of the 'culture industries' (via Adorno and Horkheimer, and more particularly Deleuze and Guattari). When music is manufactured and consumed algorithmically rather than performed and interpreted organically, when images are scrolled rather than contemplated, when knowledge is retrieved rather than formed, the transindividuating relationship between the individual and the collective is attenuated. The individual receives a product that was formed elsewhere, by means completely alien to them, and which therefore does not transform them organically. The short circuit is not, in Stiegler's account, simply a matter of laziness or distraction. It is a structural feature of hyper-industrial technical systems that are designed to capture and redirect human attention in the service of calculable ends rather than to support the open-ended, unpredictable processes of individuation.

Artificial intelligence, and specifically large language model writing tools, represent the most advanced short-circuit yet produced. Consider what happens when a student uses an AI tool to write an academic paper. The student presents a prompt based on a given assignment, and the AI system, drawing on patterns extracted from an enormous corpus of prior writing, produces a text that is formally coherent, rhetorically organized, and appropriately referenced. What has not happened is the formative process. The student has not inhabited the question over time, has not encountered the resistance of the material, has not negotiated between their own developing understanding and the demands of the discourse community, has not submitted their thinking to the discipline of inscription. It is a distillation and recycling of the already known and imagined. The essay exists; the transindividuation that would ordinarily accompany its production does not.

Stiegler (2012) is emphatic that this kind of short-circuiting not only fails to produce individuation, it actively *disindividuates*. The systematic replacement of long circuits by short circuits produces what he calls the proletarianization of *noetic* life (i.e., thinking). This is a condition in which the very desire for the slow, difficult, formative practice of inquiry is eroded, precisely because that practice has been made systematically unavailable, unnecessary, or even embarrassing when compared with the effortless productivity of the machine (what Anders termed 'Promethean shame'). This is the deepest danger of AI writing assistance: not that students will fail to develop writing skills, but that they will lose the desire to develop them, that the appetite for serious intellectual engagement will be replaced by the habit of effortless output, and that this substitution will be institutionally validated by educa-

tors and systems that are themselves operating under the pressure of calculable outcomes.

The implications for foreign language education are particularly acute. As Stiegler (2011) observes, the formation of a psychic and collective individual is inseparable from the linguistic and cultural milieus through which individuation proceeds. To learn a foreign language is, in Stieglerian terms, to participate in a new transindividuating circuit: to encounter, through the resistance of an unfamiliar linguistic system, new ways of organizing experience, new forms of attention, new possibilities for the self. This encounter is irreducibly demanding. It requires exactly the kind of sustained, attentive engagement with otherness that long circuits of transindividuation presuppose. When AI removes the linguistic friction of this encounter by providing fluent academic English on demand, it does not merely solve a practical problem; it forecloses the formative process that gives the encounter its educational and psychosocial significance.

1.3 Günther Anders and the Promethean Gap

If Stiegler gives us the vocabulary for understanding technology as both remedy and cure, Günther Anders gives us something equally important: a phenomenological account of what it *feels* like to be surpassed by one's own creations. Anders (1956), writing in the shadow of Hiroshima and the early nuclear age, developed the concept of the Promethean gap (*prometheisches Gefälle*) to describe the growing asynchronization between human beings and the technologies they produce, a gap in which humans find themselves unable to imagine the negative effects of technologies they have made, unable to feel the full weight of what they have set in motion (Toscano, 2016; Babich, 2024).

The myth of Prometheus, Anders notes, is typically read as a story of human triumph: the theft of fire from the gods, the gift of techne to humanity. But Anders reads it differently. Prometheus is punished not for his power but for his overreach, for producing something whose consequences he could not control or even fully comprehend. The Promethean gap names this structural lag. Humans are now, in Anders' formulation, 'inverted utopians'. Where ordinary utopians imagine something that does not yet exist, inverted utopians are unable to imagine what already does exist, namely the full implications of the technological world they have created (Fuchs, 2017; Toscano, 2016).

Accompanying this epistemic gap is Anders' aforementioned 'Promethean shame', the peculiar embarrassment that humans feel about their own limitations before the perceived superior precision and tirelessness of their own machines. The human body is imprecise, fallible, mortal. The machine is consistent, scalable, inexhaustible. In the presence of this asymmetry, Anders observes, humans begin to feel their own humanity as a deficiency, to experience their fallibilities not as the natural condition of finite creatures but as a failure relative to the standard set by their artifacts (Babich, 2024). This shame goes beyond the psychological, and may not even be recognized as such. It is a structural feature of human

existence in a technological world that has outrun the human capacity to inhabit it imaginatively.

The resonance of Anders' analysis with the current AI moment is difficult to overstate. Large language models produce text that is, in many measurable respects, more grammatically correct, more fluent, and more formally consistent than the prose of most student writers. Faced with this asymmetry, students and, it must be said, educators, may well feel a version of this Promethean shame, a sense that the laborious, error-prone, emotionally fraught exercise of human writing is somehow inferior to what the machine can produce effortlessly. This shame, Anders would suggest, is a symptom of something quite profound: the human inability to imaginatively grasp the full meaning of what AI represents for human culture, human cognition, and human becoming. We confront, in other words, not only a pedagogical challenge but a civilizational one, and the classroom is, in this respect, a microcosm of a much larger predicament.

Taken together, Stiegler's pharmacology and Anders' Promethean gap give us a framework for understanding the AI writing situation, particularly in foreign language academic writing, that goes considerably beyond the familiar debates about plagiarism, academic integrity, and the future of assessment. What is at stake is more important than whether students will cheat. It is a matter of what kind of human beings they are in the process of becoming, and what kind of worlds they are dedicated to bringing forth (Bradley and Kennedy, 2019). And more to our purposes here, what role does academic writing, in its full complexity as a practice of language, thought, and community, play in that transformation?

2. The Japanese Context: Neoliberalism, Anaesthesia, and the Impoverished Milieu

2.1 Language Learning and Promethean Shame

The Japanese university EFL context presents a particularly acute iteration of the pharmacological predicament described above. The causes of this situation are multiple and well-documented. The *juken* system, Japan's notoriously demanding university entrance examination training regime, tends to produce students who have spent their most formative years optimizing for test performance rather than for real inquiry. The policies of the Ministry of Education, Science and Technology (MEXT) oriented toward global competitiveness have positioned English proficiency as an economic asset far more strenuously than as a cultural or intellectual achievement, reinforcing an instrumental relationship to language that is difficult to dislodge at the university level. As Seargeant (2009) has noted, Japan's historical experience with English has been "associated at every stage with a very specific chronology of foreign contact, political coercion and even invasion" (p. 50). In other words, it is a context in which language is predominantly understood as cultural property and a marker of national

identity rather than as a medium of inquiry. This historical sedimentation of meaning continues to shape the symbolic register within which EFL learning takes place. University ranking obsessions have generated incentive structures that reward measurable outputs over transformative processes. The English language itself occupies an ambivalent position in the Japanese educational imaginary, simultaneously aspirational and alienating.

The result, as these forces compound one another, is a systematic erosion of the capacity for psychic and collective individuation in the domain of language learning. A great many students arrive at university having been trained, in effect, to be consumers of language rather than producers of meaning, to process and reproduce linguistic forms rather than to engage in the risky, open-ended practice of semiosic co-participation that language learning requires. This is, in Stiegler's terms, a short-circuiting of transindividuation: the replacement of the long, slow, reciprocal process of meaning-making through which selves and communities are formed and transformed with the rapid, frictionless consumption of pre-formed content.

Rushkoff (2013) has described the temporal dimension of this condition as 'present shock', that is, the collapse of extended temporal horizons under the pressure of digital immediacy (especially à la the smartphone), the reduction of lived time to a perpetual present in which depth and duration are sacrificed to speed and accessibility. In the context of language education, present shock manifests as a systematic devaluing of the slow, iterative, failure-ridden process of language acquisition in favor of the immediate, effortless outputs that digital technologies increasingly make possible. This represents another form of Anders' 'Promethean shame'. The student who can produce a formally acceptable essay in minutes with AI assistance is, in one register, ahead. However, in another register, the student is profoundly behind, having been deprived of the formative experience that would have made them capable of sustained inquiry.

2.2 Anaesthesia and the Proletarianization of Sensibility

This analysis is deepened by foregrounding the aesthetic dimension of Stiegler's thought. Working from Stiegler's aforementioned broad conception of 'the aesthetic' as knowing how to live, as the cultivated capacity for sensory and affective attunement that is the condition of a meaningful existence, it becomes clear that neoliberal economics and algorithmic technologies have anaesthetized individuals to the point of anxiety, apathy, loneliness, and disempowerment. The term 'anaesthesia' is not used loosely here. It names a precise pharmacological effect, the numbing of the sensory and affective apparatus that is both produced by and productive of the short-circuited libidinal economy that Stiegler diagnoses.

This anaesthesia operates at multiple levels in the Japanese EFL context. At the level of curriculum design, the dominance of communicative language teaching (CLT) approaches oriented toward transactional competence tends to reduce language to a medium for the

exchange of information rather than a site of aesthetic formation, a place where, in Kramsch's (1993) formulation, one might learn not just to speak a language but to speak with a voice, to inhabit a language imaginatively and ethically. At the level of assessment, the ubiquity of standardized tests and rubric-based evaluation produces a normalization of writing, the subordination of sincere inquiry to the reproduction of acceptable forms. At the level of student affect, the anxiety of inadequacy that pervades much EFL learning in Japan, the sense that one's English is always already deficient relative to an idealized native-speaker norm, produces a defensive withdrawal from active engagement, a preference for safe, formulaic expression over the risky, open-ended encounter with the foreign, with the unknown (Seargeant, 2009; Kramsch, 1993).

Walter Benjamin, observing the bleak cultural landscape of 1930s Germany, noted that people who have grown weary of the endless complications of everyday living, and to whom the purpose of existence seems to have been reduced to a distant vanishing point, must find it "a tremendous relief to find a way of life in which everything is solved in the simplest and most comfortable way" (Benjamin, 1933, p. 735). This observation takes on a new resonance in the context of AI writing tools. The 'relief' they offer is precisely the relief of anaesthesia of which Benjamin spoke: the lifting of the burden of the incalculable. When writing is reduced to a calculable task, when the question "what do I want to say and how can I say it well?" is replaced by "what output will satisfy the formal requirements of this assignment?", AI is the obvious solution. It is fast, fluent, and produces outputs that conform fairly reliably to formal requirements. What it cannot do is suffer the productive uncertainty of authentic noetic inquiry. But in an educational milieu that has already largely evacuated that uncertainty, this is not experienced as a loss. For what AI erodes is not only the skill of writing, but also the *desire* to write: the want of having something to say that is genuinely one's own, which is the only foundation on which writing in a meaningful sense can be built.

3. Writing as Transindividuation: The Irreplaceable Dimension

3.1 Academic Writing as Community of Practice

Against this background, the question of academic writing becomes newly urgent, not as a skills domain to be defended against technological disruption, but as a site of transindividuation that cannot be replicated or replaced by automated text generation. What Lave and Wenger (1991) understood about communities of practice is that learning cannot be disaggregated from participation. One does not first acquire skills and then join a practice, but becomes capable through the slow, risky, often disorienting experience of peripheral participation in something real. Academic writing, understood in this way, is not a set of skills to be transmitted from teacher to student, but a form of induction into a living practice, with all the vulnerability, the gradual belonging, and the transformative friction that induction entails.

This runs parallel to the American pragmatist philosopher Charles Peirce's notion of the community of inquiry (the self-correcting, dialogically constituted community of truth-seekers) and to Mikhail Bakhtin's account of dialogism (the irreducibly responsive, double-voiced character of all language use). Academic writing is, at its best, a form of what Stiegler calls long circuits of transindividuation, that is, extended dynamics of meaning-making in which individual and collective are simultaneously formed and transformed.

The key word here is 'long'. Stiegler consistently contrasts long circuits (the slow, complex, intergenerational processes through which knowledge, care, and attention are transmitted and transformed) with short circuits (the rapid, frictionless substitution of preformed content for inquiry). Traditional academic essay and paper forms, whatever their limitations, are paradigmatically long circuit. They require the writer to inhabit a question over time, to pursue a line of thought through successive encounters with difficulty and resistance, and to negotiate between individual intuition and the collective discourse that frames and responds to that intuition. These are not simply cognitive operations. They are, in Stiegler's terms, processes of psychic and collective individuation, processes through which both the writer and the community of readers to which the writing is addressed are, in some measure, transformed.

AI-generated writing short-circuits this process in a specific and consequential way. It does not only produce the output minus the process, it decouples the output from the investment that gives it meaning. The essay or paper produced by AI may be, at least formally, indistinguishable from the essay or paper produced by a human writer. However, it bears no trace of the struggle, the uncertainty, or the risk of exposure that constitute the act of writing itself. It is, in this sense, a Baudrillardian simulacrum: a copy without an original, an output without the formative process that justifies and animates it. Vallor's (2024) concept of the 'AI mirror' is relevant here. She argues that AI systems tend to reflect and amplify existing human dispositions rather than challenging users to form new and better ones. As is increasingly the case in commercial music production, AI is now used by composers and producers to create songs which incorporate existing elements that have been proven to resonate most strongly in the marketplace. Likewise, in an educational milieu already shaped by anxiety and instrumental orientation (toward what is most likely to score highly), AI writing tools risk reflecting and amplifying precisely the same type of dispositions, accelerating the tendency toward safe, formulaic production at the expense of real inquiry and creativity.

3.2 The Hypomnesic Milieu and the Politics of Memory

A second dimension of the argument for academic writing's irreplaceability concerns the relationship between writing and memory. Stiegler's account of the relationship between *anamnesis* (living, embodied memory) and *hypomnesis* (exteriorized, technical memory) is important here. For Stiegler, the *mnemotechnologies* ('memory technologies') of any given

epoch are more than just tools for storing and retrieving information, as in a library, an archive, or a database. They are the accumulation of what makes us who we are, the material infrastructure surrounding us through which psychic and collective individuation is organized and transmitted across generations. What Hayles (2007) calls 'hyper-attention' (the fragmented, surface-level cognitive mode cultivated by digital media) represents, in Stieglerian terms, a colonization of the attentional apparatus by the short circuits of hypomnesis. That is, it substitutes fast, frictionless information processing for the slower, deeper engagement that constitutes sustainable knowledge.

Academic writing, in this context, is a practice of what Stiegler calls tertiary retention: the inscription of experience in a form that can be transmitted across time and space, made available for future acts of individuation, woven into the long circuits through which knowledge is collectively produced and transformed. When students write, in the *real* sense, in the sense of engaging with a question over time, submitting their thinking to the discipline of *inscription*, they are participating in a 'combat for a politics of memory' (Stiegler, 2010, p. 69). They are taking a position in the ongoing negotiation over what shall be retained, what shall be transmitted, and what shall be allowed to slip into oblivion. AI, by contrast, is the most powerful hypomnesis yet produced. It is a system of total recall without anamnesis, of vast output without the formative struggle that gives output its meaning. AI inhabits, experiences, and expects nothing.

This is not simply a philosophical observation. It has concrete pedagogical implications. If academic writing is understood as a practice of tertiary retention, as a way of inscribing and transmitting experience that is irreducibly tied to the formative process of its production, then the replacement of that process by AI automation represents both an academic integrity crisis and an epistemic and ethical one: a foreclosure of the student's participation in the very politics of memory that constitutes a living intellectual culture. The hypomnesic milieu of contemporary digital education already tends toward this foreclosure. AI writing tools threaten to complete it.

4. Considerations for Instructors: Framing Practice in a Pharmacological Milieu

The philosophical argument developed above may seem remote from the practical realities of the once-weekly language classroom in a Japanese university. The gap between philosophical principle and institutional practice is real, and it would be dishonest to pretend that it can be fully closed by any individual instructor acting within the constraints of an unreformed system. And yet philosophy, as Stiegler insists, should never be reduced to the academic alone. It is a form of care for the present that shapes and frames what we notice, what we value, and what we resist. With this in mind, the following considerations are

offered to instructors of academic writing in English at Japanese universities, not as a prescriptive methodology but as a set of framings that may help to orient practice toward something more adequate to the pharmacological realities of the present moment.

These considerations are organized not as a checklist but as a set of overlapping orientations based on rigorous empirical observation. They are, in Stiegler's sense, *therapeutic* propositions: not cures for the condition described in this paper, but gestures toward the long circuits of transindividuation that the current milieu systematically forecloses.

1. **Treat the process of writing as the irreplaceable object of attention, not the product.** Assessment structures, wherever possible, should weight the evidence of process—the development of a question over time, the revision of a claim in response to evidence, the emergence of a voice through successive drafts—over and above the formal qualities of the final text. This is not a counsel of permissiveness, but a recognition that the formative dimension of writing is precisely what AI cannot replicate, and therefore precisely what pedagogy must insist upon. The student who brings three drafts of a struggling paragraph to class, each one a visible record of thinking in motion, is doing something that no AI-generated text can replicate or replace, and assessment that cannot see this is assessment that has lost sight of what writing is. Process-oriented approaches to second language writing have a substantial research base supporting their pedagogical value (Hyland, 2019; Matsuda, 2003), and that base takes on new urgency when the alternative is the frictionless production of AI-generated prose.
2. **Resist the equivalence of *content* and *context*.** Deep engagement with meaning requires that content be connected to our students' own indexical positions in the world, i.e., their experience, their questions, and their investments. Assignments that ask them to inhabit a question they actually care about, rather than to produce an output on a prescribed topic, are more likely to sustain the attentiveness that long circuits of transindividuation require. The choice of content is, in this sense, an ethical as well as a pedagogical decision. A student asked to write about a topic that genuinely troubles or excites them will write differently, and often better, than one asked to produce a competent response to a neutral prompt. The difference is not one of skill but of investment, and investment is precisely what the short-circuit forecloses. The postmethod tradition in applied linguistics has made this argument with considerable force. Kumaravadivelu (2006) insists that any pedagogy worthy of the name must attend to the particularities of the learner's situation rather than imposing a universalized method, while Canagarajah (2013) likewise demonstrates how academic writing pedagogy that ignores the learner's own critical positionality reproduces the very inequities it claims to address.
3. **Make the strangeness of the foreign language an explicit object of inquiry rather than an obstacle to be overcome.** Students of academic writing in English benefit from being invited to reflect on what it means to write in a language that is not

their own, particularly on the differences in rhetorical convention, epistemic assumption, and cultural framing that writing in English surfaces. This reflection is itself a form of aesthetic formation, a heightening of sensitivity to the materiality and contingency of language that deepens engagement with the writing task rather than reducing it to a formal exercise. Kramsch (2009) develops this point with particular richness in her account of the multilingual subject, arguing that the experience of writing between languages opens a symbolic dimension of self-awareness that monolingual writing cannot access. In other words, multilingual writing makes the writer conscious of how language is shaping their thought and identity. The growing literature on emotional engagement with additional languages suggests that this dimension has affective as well as cognitive consequences (Dewaele & Petrides, 2011).

4. **Create genuine dialogical structures within the classroom community.** Long circuits of transindividuation are, by definition, constituted through real relationships with real people. Peer review, collaborative inquiry, and the sustained reading and discussion of student texts within the classroom community provide the social infrastructure through which writing can become a practice of real contribution rather than a performance for institutional evaluation. These structures also provide the affective context, what Winnicott (1971) describes from a psychoanalytic viewpoint as a 'holding environment,' within which the anxiety of inquiry can be tolerated rather than avoided. The importance of collaborative dialogue for second language development is well established. Swain (2006) demonstrates how 'languaging', the act of using language to mediate one's own thinking in dialogue with others, is itself a form of knowledge construction, and Ohta (2001) shows in granular classroom detail how co-constructed interaction supports language development in ways that solitary production cannot.
5. **Prioritize depth over breadth and slowness over speed.** The temporal logic of the transindividuating long circuit is irreducibly slow. Curricula that attempt to cover too much in too little time, or that treat every writing task as equivalent regardless of the investment it requires, are structurally biased toward short circuits. Designing writing pedagogy around fewer, deeper, and longer projects, in which students have time to develop a living relationship with a question, to fail, revise, and fail again, is a direct expression of the pharmacological commitment to long circuits of individuation over the frictionless efficiency of short ones. A semester in which students write one genuinely inhabited essay is educationally richer than one in which they produce six competent ones, and any assessment culture that cannot recognize this difference has already conceded the argument to the machine. Nation and Macalister (2010) make a similar argument from the perspective of curriculum design, insisting that principled selection and sequencing (i.e., doing less, more carefully) is the hallmark of pedagogically sound language curricula. Schleppegrell (2004) likewise demonstrates how sustained engage-

ment with academic language across extended tasks produces the kind of functional linguistic awareness that superficial coverage cannot.

6. **Resist the normalization of output at the expense of voice.** Rubric-based assessment, however useful for consistency, tends to valorize the formally acceptable over the genuinely individual. Instructors who find ways to reward the emergence of a distinctive voice—a capacity for risk in expression, a willingness to say something that might be wrong but is deeply felt as one's own—are resisting the normalizing logic of assessment that the neoliberal milieu has installed as the default. It is a recognition that the development of a voice is, in Stiegler's terms, the primary index of individuation, and that no rubric can adequately capture it. Ivanič (1998) provides the most sustained account of this dimension in the applied linguistics literature, demonstrating how academic writing is always also an act of identity construction, a discoursal claiming of a self, that standardized assessment systematically fails to see. Canagarajah (2011) extends this argument to multilingual writers specifically, showing how the suppression of codemeshing and linguistic diversity in the name of academic norms silences precisely the voices that the discourse community most needs to hear.
7. **Maintain a utopian orientation.** The conditions described in this paper are, frankly, rather dispiriting. The institutional constraints are real, the pharmacological pressures are powerful, and the individual instructor's capacity to transform the milieu from within is limited. And yet, as Bradley and Kennedy (2021) have argued (following Stiegler), the utopian dimension of education, its orientation toward a possible future that exceeds the given present, is not a luxury but a necessity. To teach writing in the academy as a practice of sustained inquiry, in full awareness of all the forces arrayed against such a practice, is itself a form of what Stiegler calls *negentropy*: the cultivation of complexity, individuation, and care against the entropic tendencies of a system oriented toward the simple, the comfortable, and the calculable. Norton (2013) grounds this utopian impulse in the concrete conditions of language learners' lives, showing how investment in language learning is always also investment in an imagined future self and community, while Pennycook (2021) argues that critical pedagogy in TESOL must hold onto its transformative aspirations even, especially, in institutional conditions that work against them.

Conclusion: Writing Toward the Incalculable

This paper has argued that the arrival of AI writing tools in the EFL classroom is not primarily a problem of academic integrity but a pharmacological event. In other words, it is a development that simultaneously offers new possibilities and threatens to accelerate an already-advanced proletarianization of the faculties, aesthetic, noetic, and libidinal, that aca-

demic writing, at its best, cultivates and expresses. Drawing on Stiegler's philosophy of technics, transindividuation, and pharmacology, and supplementing it with Anders' account of the Promethean gap and its phenomenology of technological shame, the argument has sought to establish that what is at stake in the AI writing debate is not only whether students will produce their own work but what kind of beings they are en route to becoming, and whether the educational milieu in which they find themselves is capable of supporting individuation or just accelerating its foreclosure.

The Japanese EFL context, examined through the lens of this framework, emerges as a site of particular urgency. It is an environment already shaped by the anaesthetizing forces of neoliberal instrumentalism, standardized assessment, and the commodification of English language proficiency. Into this, AI arrives not as a foreign intruder but as the logical extension of existing tendencies. The argument has been that academic writing, understood not as a skills domain but as a practice of inscription, community, and care, retains an irreplaceable role in this context as a site of long circuits of transindividuation, of the politics of memory, and of the aesthetic encounter with the foreign that constitutes language learning properly understood. The seven practical considerations offered above represent an attempt to translate this philosophical argument into orientations that individual instructors can bring to bear within the constraints of their own classrooms, without either naïvely imagining that good pedagogy alone can transform the milieu or fatalistically concluding that the milieu makes good pedagogy impossible.

None of this implies a simple rejection of AI in educational contexts. The pharmacological logic that governs every technology applies here as well. AI tools can be deployed in ways that support or foreclose individuation, and the task of the educator is to attend carefully to this difference, to cultivate what Stiegler calls the care of the self and of others that pharmacological engagement requires. This care is neither the uncritical enthusiasm of the techno-optimist nor the defensive nostalgia of the techno-pessimist. Rather, it is a sustained, critical, and loving attention to the conditions under which becoming is possible.

The title of this paper speaks of writing toward the incalculable. The phrase is meant to capture something essential about what is at stake. Writing at its most fundamental, writing that exceeds what is just formally acceptable, that takes the risk of saying something that one does not yet fully know how to say, that opens toward the unpredictable response of an other, is always oriented toward what cannot be calculated in advance. This orientation is precisely what AI, as a probabilistic system of trained outputs, cannot replicate. This is not because AI is incapable of producing impressive text, but because the incalculable is not a property of the text but of the relationship, between writer and question, between writer and reader, between the self one is and the self one is in the process of becoming, within which genuine writing takes place.

To preserve this relationship, in all its difficulty, its uncertainty, and its irreplaceable

richness, is the deepest task of academic writing pedagogy in the age of AI. It is also a political task, a form of resistance to the accelerating proletarianization of sensibility and thought that threatens, if left unchecked, to complete the anaesthesia that Benjamin already diagnosed in 1933. The educator who insists on the value of genuine writing in the age of the machine is not a Luddite but a practitioner of negentropy: the cultivation of complexity, individuation, and care against the entropic tendencies of a digital capitalism oriented toward the simple, the comfortable, and the calculable. In this sense, writing—slow, difficult, risky, irreplaceable—remains one of the last and most important sites of what it means to think, to care, and to become.

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要旨

人工知能（AI）の急速な普及は、大学における学術的ライティング指導に根本的な問いを突きつけている。本稿は、日本の大学における英語外国語教育（EFL）を主な文脈として、AI ライティングツールの台頭が学術的ライティングの目的と意義にいかなる脅威をもたらすかを哲学的に考察する。ベルナール・スティグレールの技術哲学およびギュンター・アンダースの「プロメテウス的差異」の概念を援用しながら、本稿は AI を諸刃の剣として捉える。AI は学習者の利便性を高める一方で、書くという行為に本来備わっている思考の深化、自己形成、および対話的な意味生成の過程を根本から損なう危険性を孕んでいる。日本の大学英語教育はすでに新自由主義的政策により学術的ライティングの本来の意義が空洞化しつつあり、AI の普及はこの状況をさらに加速させるおそれがある。本稿は、学術的ライティングを技能習得の訓練としてではなく、問いと真剣に向き合い、時間をかけて思考を深め、学びの共同体に参与する実践として再定義することを提唱し、英語学術ライティングを指導する教員に向けて七つの教育的考察を提示する。