Article

Finance and Society
2023, 9(3): 18-36
© The Author(s)
10.2218/finsoc.8988

Figuring volatility

Ackbar Abbas
UC Irvine, USA

Abstract

This article argues that there are parallels between developments in modern science and in art and culture, including the culture of finance, and that these developments can be tracked by a notion of volatility not just as change, but as how *change itself has changed*. Describing this paradigm shift requires a language that is precise but indeterminate, a language akin to metaphor, understood as *figures of volatility*. Three such figures are anamorphosis, anachronism, and catachresis. These figures are major instantiations of volatility, though they do not exhaust all the possibilities. What they indicate is not just that our frames of understanding have shifted, but that we are dealing with problematic, multiple, and overlapping frames: anamorphosis problematizes our experience of space, anachronism of time, and catachresis of language. These figures are not all in play at the same time. In literature, catachresis may be the dominant figure; in dance, anamorphosis; in 'slow cinema', anachronism. The aim is less to arrive at a set of defining characteristics than to follow a series of transformations across different cultural fields. Almost every field in our time is volatile each in its own way, and this has consequences for methodology. If figures are tools to think with, not to regulate thought, a necessary method would be to allow these figures to emerge from the material, not from a checklist. The question of volatility is arguably the key intellectual challenge of our time because it allows us to see deviation from a norm not just as an aberration, but as an indication that established norms are losing their normative value.

Keywords

Volatility, overlapping paradigms, precise illegibility, slow cinema, painting, quantum image

I. Figures of volatility

The dictionary tells us that 'volatile' derives from the Latin *volatilis*, which means 'fleeting, transitory, flying'. In chemistry but also in politics, volatility refers to the unstable moment when a sudden and violent change of state is about to occur. Applied to people, the term suggests individuals that are excitable, unpredictable, and borderline irrational. Hence

Corresponding author:
Ackbar Abbas, UC Irvine, 41 Mistral Lane, Irvine, CA92617, USA. Email: mabbas@uci.edu
https://doi.org/10.2218/finsoc.8988

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

volatility is usually associated with phenomena or behavior that are visceral, violent, and visible. However, these standard meanings of volatility leave out of consideration some of its most important and paradoxical features. When we look into fields as diverse as finance, culture, and politics, we find that volatility can manifest itself in counter-intuitive ways, displaying features like slowness rather than rapid movement, or hysteresis (delayed action) rather than immediacy.

The Italian Futurists were less subtle when they tried to imagine the volatility of the early twentieth century in terms of speed of movement and change, seeking to capture volatility with their images of fast cars, aeroplanes, and cities transformed by technology. The Futurist mistake was to confuse visible movement with volatility. We have learnt from politics and economics, as well as art and quantum mechanics, that movement is not the same as volatility. We have volatility only when movement becomes erratic, unpredictable, and non-directional, something that images of fast trains devouring space cannot capture.

In contrast to the Futurists, the pre-eminent theorist of speed today, Paul Virilio, points out that speed is inherently paradoxical or non-directional. After a critical point has been exceeded, speed morphs into its opposite, inertia. At high speeds, a spinning ceiling fan appears stationary. Similarly, the information technologies that undergird global networks produce not so much time-space contraction (directional) as time-space distortion (directional uncertainty). Hence Virilio's notions of "polar inertia" and cities "at the end of time"; that is to say, the end of time as we know it, and of movement and change as we know it (Virilio and Lotringer, 1997: 64-67). The real issue of volatility is not how to deal with movement and change but how to address the fact that *change itself has changed*, and what effects this *change in change* has on our experience of space, time, and language.

As a simple illustration, take what the great British racing driver Stirling Moss used to say about different forms of speed. There is the speed of going at 150mph down a straight, and there is the speed of taking a hairpin turn at 30mph – a more 'intensive' kind of speed that paradoxically involves a 'slowing down'. In these observations, Moss is recognizing in his own way what Gilles Deleuze elaborates on in his books on cinema as Bergson's third thesis on movement: there is on the one hand movement as directional in a given space, in relation to a whole that does not change (e.g., 150mph along a straight), and on the other, movement in relation to a whole that changes (e.g., the hairpin turn that involves a change of spatial frameworks, a swerve or clinamen) (Deleuze, 1989a: 8-11).

It is movement involving a whole that changes (in effect, a non-directional movement of movement) that can properly be called volatile. 'A whole that changes' implies that our understanding of the whole has to be continuously reset. In finance, 'delta-hedging' and 'dynamic replication' are some attempts at dealing with a whole that changes; while in film, rethinking the poetics of the long take and so-called 'slow cinema' (in Tsai Mingliang's work, for example) addresses a similar issue of volatility. 'Slow cinema', like hairpin turns, is not necessarily slow. It draws on what Bergson calls 'intensive' rather than 'extensive' movement. The extensive discharges its energies through overt action; the intensive bottles it up as tension. This is why a space that can be conceived of in terms of a whole that does not change, or as a single framework, is not a volatile space. Action and movement in such a space may be complex, but complexity is not volatility. There is volatility only when you find multiple *overlapping* frameworks, and not when one framework *succeeds* another. This is why we have to think of a volatile space as one where movement loses clear directionality and takes on a seeming randomness, and time loses its chronological sequentiality and various kinds of *anachronisms* begin to take hold.

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

Though Deleuze in his cinema books does not raise the issue of volatility directly, he does so implicitly when he discusses the shift from the 'movement-image' to the 'time-image'. Interestingly, going beyond the movement-image (which can be seen already in neorealism or the films of Ozu) may initially seem like a regression, a return to inaction, fixed full-frontal camera angles, slowness, the absence of drama, even boredom. Deleuze calls this "modern" kind of cinema a cinema of the seer and no longer of the agent (Deleuze, 1989b: 2). But he goes on to add that a beyond of movement does not mean *no movement*. What we find instead are *aberrant* movements, *false* movements; i.e., volatile movement. Also, instead of causal links and continuities in a single space, we find "impossible continuities" across multiple overlapping times and spaces (Deleuze, 1989b: 36). In fact, what Deleuze calls modern cinema begins with putting into crisis both movement as action and time as chronology. We read in Chapter 6 of Cinema 2: "Thus movement can tend to zero … [or it] may also be exaggerated, be incessant, become a world movement, a Brownian movement … a multiplicity of movement on different scales" (Deleuze, 1989b: 128-29). He continues: "We no longer have a chronological time … we have a chronic non-chronological time which produces movements necessarily 'abnormal', essentially 'false' (Deleuze, 1989b: 128-29). What makes modern cinema then is how movement loses clear directionality and takes on the randomness of Brownian movement, or what Deleuze calls 'false movement'; while time loses its chronological sequentiality in favor of more paradoxical temporalities.

We see here already striking parallels between Deleuze's thoughts on cinema and volatility in finance. The finance market essentially reinvented itself sometime in the 1980s by introducing trading in volatility itself, and it did so by rethinking movement and time. In this, it has an almost uncanny resemblance to how Deleuze conceives of cinema in terms of the 'movement-image' and the 'time-image'. Finance too has its own brilliant theorists – Fischer Black, Myron Scholes, and Robert C. Merton. Together they came up with the Black-Scholes formula, a precise mathematical formula for pricing volatility, which, up until that point, held an economic potential that had lain dormant, just as Deleuze's time-image revealed the cinematic potential of film forms that were once dormant. In spite of the 2008 market crash that has given volatility a bad name in the popular imagination, the Black-Scholes formula for pricing volatility and options remains important to financial markets. Surprisingly, Deleuze's thoughts on cinema can be compared to the rethinking of movement and time that made options trading possible.

Take the question of price movements. The price of stocks we know can go up or down; in the trade this is called directional risk. Traditionally, the framework of thinking for making a profit in the market is simply to buy low and sell high, which amounts to placing a bet on the direction of price movements. At this point, enter Black and Scholes with a different framework. The genius of the Black-Scholes formula is to distinguish between two concepts that might seem the same: directional risk (traditional markets) and volatility (an understanding of which created the new options market). To price volatility, you look not to the actual price movements of a stock and its expected returns, but to a statistical history of how the stock tends to deviate from its own mean, i.e., to what is called the spread. The spread then is a measure of deviation from a mean and not a measure of actual movement. Another way of putting this is to say that what the spread measures is the movement of movement. The greater the spread, the higher the volatility; but even a small difference in the spread, a small movement of movement, can result in a large difference in price movement. In terms of time, the spread as a measure of volatility has a slow temporality. It operates not in actual chronological time where frantic price movements take place, but in the time of meta-movements and statistical deviations that cover longer time periods and moves more slowly,

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

much like what Bergson calls the time of duration. Here then are some parallels between modern finance and modern cinema: the linking of 'slowness' and volatility; the emergence of the spread and 'slow cinema' as critiques of directional movement.

However, noting striking parallels in different fields may also raise a nagging methodological question. When we speak of volatility in a qualitative rather than quantitative way (as we have to when we speak of cultural texts), do we not run the risk of being vague and merely 'metaphorical', drawing on easy analogies with more precise formulations of the hard sciences or neuroscience? What is the status of Deleuze's allusions to 'Brownian movement' and notions like 'the brain is the screen'? On the other hand, if volatility were susceptible to precise formulations, it would not be volatile anymore. This observation, it should be noted, is emphatically not an argument against precision of thought, but rather an argument for arriving at the *appropriate kind of precision*. It is never merely a matter of making or reducing what is illegible to the legible, of removing noise and shadow, but of arriving at the *precisely illegible*. As Niels Bohr famously said, "We must be clear that when it comes to atoms, language can be used only as in poetry". We can define 'poetry' or metaphor then as a kind of precise illegibility, which is implicitly the argument of Bohr as well as of Hans Blumenberg (2016) in his seminal work on 'metaphorology':

> Metaphors can first of all be *leftover elements*, rudiments on the path *from mythos to logos* … But metaphors can also … be *foundational elements* of philosophical language, 'translations' that resist being converted back into authenticity and logicality. (Blumenberg, 2016: 3)

Good metaphors are both precise and illegible at the same time. For example, the 'volatility smile' of financial analysis (a graph that plots implied volatility against the strike price of a group of options; a graph that sometimes, but not always, curves upwards at either end, making it resemble a smile – or a grimace) has both the exactness and elusiveness of a good metaphor. Volatility may have found in metaphor its proper method of analysis, provided of course that we do not see metaphor simply as a rhetorical device, but as the name for various *figures of volatility*. Three such figures are *anamorphosis*, *anachronism*, and *catachresis*. Let me elaborate on these figures by showing how they come into play in the case of contemporary China, economically and politically one of the most volatile places in the world today.

We can think about anamorphosis as the point-by-point transposition of an image from one representational grid (e.g., a flat surface) to another (e.g., a convex or concave surface). The result would be an image that appears 'distorted': heightened, shortened, or twisted. China's socialist market economy – which is an attempt to substitute one political-economic grid for another, to establish neoliberal practices on a socialist base, to change identity without losing identity – produces its own anamorphoses. We find, for example, the spectacle of a 'socialist' state rolling back free health care, taking away the 'iron rice bowl', and so implacably replacing the proletariat by the 'precariat'. We also find a single party system with the state as the final arbiter in all-important matters co-existing with a consumer-oriented society where individual choice and preferences are given priority. November 11, or 11/11, in China is Single's Day, the brainchild of Ali Baba. Allegedly intended to give single people an excuse to buy gifts online for themselves on Taobao (the Chinese equivalent of eBay), it has since turned into what Hong Kong's South China Morning Post calls "the largest 24-hour shopping binge on the planet" (Lee, 2017). Anamorphosis as figure points to a twist in social space, where the torsions in the system show themselves in bizarre distortions. Mao and Taobao indeed make strange bedfellows.

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

A second figure of volatility is anachronism. Is the socialist market economy another phase of socialism? Is China today capitalist in everything else but name alone? Or, more paradoxically, are we dealing with neither the life nor death of socialism, but with its *afterlife*? With a *posthumous socialism* more than a post socialism? Socialism in posthumous form can have a vitality stronger than ever before. It is not a case of socialism being more alive than dead in China today or vice versa, but a case of socialism being more alive *when* dead. Spatially and temporally then, posthumous socialism is more unpredictable and volatile than post socialism. Whereas in post socialism, one set of conditions is seen to succeed and replace another, in posthumous socialism we are forced to inhabit overlapping time frames, where a socialist past is not just succeeded and replaced by a capitalist present, but coexists with it. With overlapping time frames, anachronisms of a new and peculiar kind are everywhere. Anachronism no longer means being behind the times; rather, it is a sign of the times. For example, in a China that seems to the outsider to be obsessed by flashy brand names and consumerism, we still find, as a common occurrence, the anachronistic singing of revolutionary songs. Another example is the strange waves of nostalgia that periodically sweep the country, like the brief vogue enjoyed by restaurants serving atrocious Cultural Revolution food. When that vogue died down, another took its place: nostalgia for the 1980s, the period that clearly marked the end of the Cultural Revolution when universities, conservatories and art academies were re-opened. But the fact that there can be nostalgia *both* for the Cultural Revolution and for its demise, the fact that nostalgia can be so arbitrary, suggests that what we are dealing with is more like a form of hysteria whose symptoms are indeed mobile and arbitrary. When time itself is twisted, history is experienced as hysteria, including the history of socialism itself.

If anamorphosis points to a twist in space, and anachronism to a twist in time, then catachresis, as a third figure of volatility, points to a twist in language. We see catachresis already demonstrated in the phrase 'socialist market economy' itself, which seems to be a blatant contradiction in terms. However, catachresis in this case is less about the wrong use of words (the usual signification of catachresis) than about the attempt by language to keep pace with a volatile situation that can only be described catachrestically. Catachresis is to language what, in Paul Virilio's argument, 'the accident' is to technological innovation. Virilio sees 'the accident' as an intrinsic albeit negative part of technological innovation. "To invent the train is to invent derailment; to invent the ship is to invent the shipwreck… We do not yet understand very well this negative innovation… We are faced [today] with a new type of accident for which the only reference is the analogy to the stock market crash…" (Virilio, 1998: 20-2).

Against a whole tradition that sees good writing as coming up with *le mot juste*, the exact word, we may have to concede that *le mot juste* is just another word, and like catachresis and metaphor, something precisely illegible.

These figures are major instantiations of volatility, though they do not exhaust all the possibilities. What they indicate is not just that our frames of understanding have shifted, but that we are dealing with problematic, multiple, and overlapping frames: anamorphosis problematizes our experience of space, anachronism of time, and catachresis of language. Note also that these figures are not necessarily all in play together as they are in the case of China. In other contexts, like literature and literary theory, catachresis may be the dominant figure; in dance, anamorphosis; in 'slow cinema', anachronism. Our aim is less to arrive at a set of defining characteristics than to follow a series of parallel but not identical transformations across different cultural fields. Almost every field in our time across science and the arts is volatile each in its own way, and this has consequences for methodology. If figures are regarded as tools to think with, not to regulate thought, a necessary method would

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

be to let them emerge from the material instead of from a checklist, to avoid fitting everything tendentiously into a bed of Procrustes (Taleb, 2016).

Another methodological consequence concerns the structure of presentation. The article quite deliberately eschews a structure that begins with an introduction, followed by illustrative 'case histories', ending with a number of general conclusions. Instead, the article is divided into two non-sequential sections, so that Section I could be read *before or after* Section II. Similarly, Section II has various sub-sections marked A to E, each sub-section focusing on specific examples from a different cultural field, but the sub-sections could be read in *any order, including the order of presentation*. If there are no general conclusions, that may be because of the nature of the subject. With this structure of presentation in mind, let me move to Section II.

II. Volatility across cultural fields

The question of volatility is arguably the key intellectual challenge of our time, because it allows us to see deviation from a norm not just as an aberration but also as an indication that established norms are losing their normative value. The next step then is to learn how to *arbitrage aberrations*, whether in the financial field or in a cultural field like literary theory.

A. Literary theory: Paul de Man

Despite the outcry over posthumous revelations about de Man's youthful antisemitic writings, he remains, I would argue, the major literary theorist of volatility. His classic text 'Allegories of Reading' can also be thought of as 'volatilities of reading', while his notion of allegory can be viewed as a kind of catachresis. We can follow de Man's argument through his idiosyncratic use of three inter-related key terms: temporality, rhetoric, and reading. In an essay on Proust called 'Reading', de Man (1982) explains what temporality signifies by pointing to a phrase in *Recherche* that keeps recurring: "Plus tard, j'ai compris". Does this mean (the usual reading): 'I don't understand now, but I will later'? Or does it mean, more scandalously, but also more in keeping with a rigorous reading of the phrase: 'Understanding always takes place later', suggesting that the time of experience and the time of understanding are intertwined but never coincide. "As a writer, Proust is the one who knows that the hour of truth, like the hour of death, never arrives on time, since what we call time is precisely truth's inability to coincide with itself" (de Man, 1982: 78). De Man sees temporality not as chronological and directional, but as the gap that exists between experience and understanding. It is this gap that complicates language and makes it volatile, necessarily so in the case of literary language. In a crucial passage of 'Blindness and Insight', de Man describes literary language as in effect a *rhetoric of temporality* by showing that a literary text has a structure very much like the indeterminate and multi-dimensional frameworks of volatile spaces:

> Things do not happen as if a literary text … moved for a certain period of time away from its center, then turned around, folding back upon itself at one specific moment to travel back to its genuine point of origin. These imaginary motions between fictional points cannot be located, dated, and represented as if they were places in a geography or events in a genetic history… the three moments of flight, return, and the turning point at which flight changes into a return or vice-versa, exist simultaneously on levels of meaning that are so intimately intertwined that they cannot be separated … Our entire argument lies compressed in such formulations. (de Man, 1983: 163)

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

In this passage, de Man distinguishes (much like a day trader!) between chronology as directional and temporality as a volatile structure of simultaneous and overlapping frameworks.

Rhetoric too in the context of temporality means something more and other than the ability to use figurative language. Rhetoric has more to do with how the literary text surreptitiously moves against its own narrative, sometimes in quite contradictory and scandalous ways; this takes place at the level of the text's *figuration*, not at the level of figurative language. Take a transparent-looking lyric, like one of Wordsworth's 'Lucy' poems:

> She dwelt among the untrodden ways
> Beside the springs of Dove;
> A maid whom there were none to praise,
> And very few to love.
>
> A violet by a mossy stone
> Half-hidden from the eye!
> – Fair as a star, when only one
> Is shining in the sky.
>
> She lived unknown, and few could know
> When Lucy ceased to be;
> But she is in her grave, and, O!
> The difference to me!

Read straight, the poem is one of the most moving accounts of the loss of a beloved person in the English language. But to read it straight, we will have to overlook a number of aberrant details. For example, in stanza 1, Lucy is remembered as "a maid whom there was none to praise", and "none" literally means that, back in the day, *even the poet* who is now writing her epitaph did not praise her. After what amounts to a tacit admission, the poet proceeds in stanza 2 to praise her in highly figurative 'poetic' language, the fulsomeness of the language suggesting that the poet is atoning for his own neglect and culpability, and so 'doth protest too much'. After this aside or interlude, stanza 3 picks up the narrative again with "She lived unknown" and ends with her death. The shock of this short lyric is not that Lucy dies; after all, that is the subject of the poem. The shock is that the poet's perception of her *depends* on her death. She *lived* alone, in the midst of indifference; only her death enables her *difference* to be perceived, with the shock of surprise, ("But she is in her grave, and, O!/The difference to me!"). What is scandalous and dangerous about the poem is that it sees *the moment of loss as the moment of perception*, an insight that the poem's narrative is blind to, an insight only legible in the poem's figuration. Note yet another twist: if there is paradox, scandal, and perversity, the poet's voice does not register it. Paradox is not represented as paradox, but as a story with a chronological sequence (stanzas 1 and 3) and contradictory elements can be set down as different parts of a continuous story. The buffetings of paradox are buffered by narrative, and the perversity of verse lies in the fact that the most scandalous insights affect an air of the commonplace.

One particular rhetorical figure that attracted de Man's attention is the rhetorical question. Generally, a rhetorical question is understood to be a question that does not require an answer. When Edith Bunker asks Archie in an episode of *All in the Family* whether he wants his bowling shoelaces tied "over" or "under", he answers exasperatedly, "What's the difference?", to mean there is no difference or the difference is trivial and non-consequential. However, in a literary text, things are not quite that straightforward, and what sounds like a

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

rhetorical question may not be one at all. His example is the often quoted last 2 lines of Yeats's 'Among School Children':

> O body swayed to music, O brightening glance
> How can we know the dancer from the dance?

This is usually read as a rhetorical question, implying we cannot know, because in the dance, body and movement are one. However, the question that de Man asks is what would happen if we took the question literally? In that case, the line would no longer imply we cannot know, but rather asks, in puzzlement: 'How *can* we know?' i.e., how can we separate into its elements what seems like a unity? An important point to add about the reading of Yeats' lines and the Wordsworth poem is the point about *undecidability*. It is not a question of deciding between a straight or perverse reading, nor can we "in any way make a valid decision as to which of the readings can be given priority over the other; none can exist in the other's absence" (de Man, 1982: 12).

One conclusion that de Man does not shy away from is that the volatility of the literary text turns all readings into 'misreadings'. The more rigorous the reading, the more aware it is of the volatility of the text, and hence the more unreliable it is. Reading is not:

> ... an emotive reaction to what language does, but ... an emotive reaction to the impossibility of knowing what it might be up to. Literature as well as criticism – the difference between them being delusive – is ... the most rigorous and, *consequently*, the most unreliable language in terms of which man names and transforms himself. (de Man, 1982: 19)

In de Man, reading is not a method of interpreting or domesticating volatility, whether with a hermeneutics of belief or a hermeneutics of suspicion. Rather, reading is itself a volatile act, *where rigor and unreliability go together*, while the literary text always comes across, like metaphor, as something precisely illegible.

Are there political implications to de Man's volatilities of reading? One real danger is that 'undecidability' would allow demagogues' intellectual cover to spin the narrative, and spinning has already become an important part of media-dominated political life, in the US and elsewhere. But the political value of an 'undecidability' where the stress falls on rigor and not on loose thinking, is precisely to alert us to the pitfalls of language, by showing us again and again, even in the most unlikely places like the Archie Bunker sit-com, the volatility embedded in the language we use. Perhaps there may be a sense in which de Man's work as a literary theorist in America is his own political *mea culpa* vis-à-vis his early antisemitic writings, a demonstration of 'later, I understood' in both literature and politics.

B. Dance: Pina Bausch's Tanztheater

I will discuss Pina Bausch's amazing work in dance through an equally amazing film about her choreography, Wim Wenders' 'Pina'. The aim, it should be pointed out, is not to determine Pina Bausch's place in the history of dance, which Wenders' film does not do, but to address the relation between volatility, bodies, and movement in Bausch's *Tanztheater*, which is what Wenders' film does quite brilliantly. As read by de Man, Yeats' line "How can we know the dancer from the dance?" registers a sense of puzzlement about whether in the dance, dancer and dance are unified or disparate entities. A similar puzzlement underlies Pina Bausch's choreography.

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

Take the piece *My Body is Strong*, which seems to show incongruously muscular male arms displayed on a female body dressed in red. The deception is achieved by having an obscured male dancer stand behind the female dancer. Here, not only are dancer and dance separate; even the dancer is separate from herself. Like deconstruction, the inventive strangeness of Pina Bausch's choreography derives from this puzzling over dancer and dance, body and movement, and the illusions of congruity. Dance is not a matter of the trained dancer in control of movement; rather, it is movement itself, a *supra-personal element* at least partly independent of the dancer, that courses through the dancer's body, resulting in movement that is not only volatile and unpredictable but also not completely choreographable. In her famous piece *Café Muller*, Bausch dances like a sleepwalker, or like one of Kleist's marionettes. In another piece, *Falling Body,* the body becomes rigid and catatonic, no longer the conscious source of movement but acting like an inanimate object falling to the ground obeying only the law of gravity. These movements, because they are not entirely under the dancer's control, take on an aleatory character, resulting in *false movements* that are sometimes graceful, sometimes awkward and ugly. It is as if Pina Bausch's highly trained dancers seem to have forgotten how to move, or as if their bodies had to *unlearn* all they have learnt about movement before they could be a proper medium for movement. In this respect, Bausch's choreographic practice has something in common with de Man's practice of theory insofar as in both cases, rigor and unreliability are engaged in a *pas de deux*.

In Bausch's choreography, volatility does not revolve around visual spectacles of mobility, but around the way an *indiscernible detail* can transform movement. For example, Bausch has danced the piece *Café Muller* many times with her eyes closed, but every performance produces a different effect. Why is this? She surmises that what distinguishes one performance from another is whether, behind closed lids, the eyes are turned *downward* or focused *straight ahead*. This detail is indiscernible but decisive, because it gives the movement as a whole a different balance: not balance as mental or physical equilibrium, but as something like the alertness and presence of mind required of someone faced with possible disaster and catastrophe, as in the dance piece about a man balancing sticks, forced to move slowly and cautiously.

A number of other pieces present dance as a succession of minor catastrophes and partial recoveries: the body moves, collapses, and picks itself up again. In one segment from *Café Muller*, a woman jumps into a man's arms, falls off, and repeats the attempt. In this and other examples, slapstick of a particular kind is a crucial element. It is not slapstick of the slipping-on-a-banana-peel kind that just shows the dancer's loss of control of the body. Rather, slapstick in Bausch's *Tanztheater* shows human subjects in an uneasy relation to a natural or man-made environment they cannot dominate, dealing with physical and social forces they cannot control. Hence what *Tanztheater* returns to again and again are *incongruous situations*, unfolding by means of a choreography that takes the form of a *controlled loss-of-control.* This is a kind of slapstick akin to what we find in Buster Keaton and Samuel Beckett, and *Tanztheater* develops the idea by placing dance incongruously against the background of elaborate and often outrageous sets and settings, whether on stage or in unexpected places off-stage. Some pieces set the intensity of dance in the public and in different spaces of the city: against the background of a deserted factory, at a busy traffic intersection, beside a public swimming pool. Other pieces show the body as an object among objects. And these objects, including the body, act as obstacles to movement (like the chairs and tables in *Café Muller* that have to be pushed aside.) We feel the weight of the body when dancing uphill, and its unfamiliarity when dancing in water. One of the most striking examples is the piece where we see a man dancing with a woman on his back, then the woman dancing with the man on

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

her back, while in the background, we see a woman in red moving with a tree growing inexplicably out of her head. Another striking piece shows a dancer tied at the waist by a rope that curtails her movement. In all these examples, Pina Bausch's choreography does not ignore the risk of disaster but draws energy from it. Her one requirement for her dancers, who are otherwise free to improvise their own movements, has always been: "You have to be crazier. Remember: you have to scare me!"

The risk (volatility) inherent in every movement gives them a strong affective charge: motion becomes emotion or affect. "I'm not interested in how my dancers move", Pina Bausch said in Wenders' film, "I'm interested in what moves them". And what moves them is affect, which is not just emotion. Affect cannot be defined as 'love', 'joy', or 'despair'. Affect is emotion without a name: intense, not fully understood, and awkward. Awkward emotion, hence awkward movement, including slapstick. Dance-as-affect therefore is not a matter of the body-as-subject expressing an emotion, but rather a matter of affect mobilizing and immobilizing the body, and like movement itself, something supra-personal and unpredictable. For example, the piece *Dance for Love* problematizes love by showing a dancer flirting with a hippopotamus, just as in *A Midsummer's Night Dream* the Fairy Queen Titania, under the spell of a magic potion, is in love with an ass.

Throughout the film, Wenders punctuates well-known scenes from *Tanztheater* performances by interviews with the dancers who worked closely with Bausch. The dancers speak of her as an extremely inspiring teacher and some also speak of her mastery of movement. But everywhere in these testimonials the tone of gratitude and admiration is mixed with an undertone of puzzlement. While these comments from those who knew her best could offer valuable insights into Pina Bausch's biography, it is also true that Wenders's film is not the biography of a *choreographer* but the biography of a *choreography.* And from the testimony of the choreography in the film, we see how inappropriate it is to put the emphasis on Pina Bausch's 'mastery' of movement. Rather her great achievement consists in making dance out of inability and disaster; in other words, out of *catachrestic movement in an anamorphic space*. Wenders opened the film with a piece showing Pina Bausch using a very simple and comically inadequate set of gestures to represent each of the four seasons, hardly an image of mastery, and these gestures are repeated by the whole company towards the end of the film in a kind of *ritornello*.

Perhaps the most illuminating comment in the film on Bausch's poetics of inadequation is a throwaway line: "She moved as if she had a hole in her stomach". It is also as if what Tanztheater Wuppertal, the dance group she founded, had always been striving to reach was the degree zero of dance, the hole in the center that does not give away what direction movement would take.

C. Slow cinema: Tsai Mingliang's long takes

The long take is usually associated with slowness, inaction, and muteness. Tsai belongs to this tradition but he takes it to such extremes that everything is changed; the muteness of the long take is also a mutation. I will examine Tsai's use of the long take in three of his later films.

Walker

Walker (2012) has exasperated many people because nothing at all seems to happen, and 30 minutes feel more like 3 hours. The film is shot as a series of long takes. Each scene shows a

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

monk in red robes, walking excruciatingly slowly across different locations of a city some would recognize as Hong Kong (HK). Unlike the monk in the classic Chinese novel *Journey to the West*, Tsai's walker monk acts like someone who has returned shell-shocked from a war zone, not from a quest for Holy Scripture. Instead of narrative, what we find is the 'slowness' of the long take. What does slowness in Tsai's film signify? Unlike slow-walking figures such as the nineteenth century flaneur, the slowness of the walker monk is not a symbolic protest against the rapid pace of urban life, which manifested itself, according to Walter Benjamin, in the brief Parisian vogue of taking turtles for a walk. Tsai's walker monk moving slowly and almost painfully with head bent and arms extended reminds us more of the torture victims of Abu Ghraib. The monk's slowness is not that of the flaneur or the somnambulist, but closer to that of the funambulist or tight-rope walker, and even closer to someone traversing a minefield where a small misstep would be a major mishap. The space he traverses is not merely a rapidly changing space that he tries to slow down, but a space where change takes unpredictable forms, including seemingly to be no change at all. There is everywhere in Tsai's work a relation between slowness and volatility.

This raises a key point about *Walker*, namely, the experience Tsai's long takes give of living in global cities like HK or Taipei. In spite of what is often said, globalization produces not so much time-space *compressions*, which is still relatively directional and predictable, as time-space *distortions*, with its strange twists and anomalies. Thus, the walker monk is not just an old-fashioned figure from the past, but an anachronistic figure, inserted in a city that whirls around him; a city where time is no longer experienced as single and sequential, but as made up of multiple temporal frames that overlap without completely coinciding. Anachronism – not as being behind the times but as a sign of the times – is underlined in the last scene, when we finally see that the plastic bags the walker has been holding contains not sacred texts but fast food, a MacDonald-style hamburger, which he proceeds to eat slowly.

What Time Is It There?

The exploration of temporal-spatial anomalies and distortions through an innovative understanding of the long take is also the main concern of an earlier film *What Time is it There?* (2001), and the precision and concision achieved in *Walker* would be impossible without it. The film begins with – what else? – a long take that seems spatially simple and very little happens. We see in deep focus a mundane Taipei interior, shot full frontally with a fixed camera. A man is seated at a folding metal table, with a plate of food that he doesn't eat. At one point he gets up, goes to the back of the room and calls out a name: Xiao Kang. (Later we learn that it is his son's name). Then he returns to sit at the table and begins to smoke a cigarette. And that is it, a take that lasts 3 or 4 minutes where basically nothing happens.

We only realize how groundbreaking this long take is when Tsai finally cuts to a second scene where we see Xiao Kang, the son, in a car holding a casket. The casket contains his father's ashes that he is taking to the columbarium. We realize with a shock that the old but vital man we had just seen is a dead man; the 'real' image is a spectral image, and the homely Taipei apartment that could hardly hold our attention has suddenly turned strange. Tsai's long takes are a mutation of the form when we compare them to what we find in Orson Welles or Hou Hsiao-Hsien: unlike theirs, his long takes are not self-contained and cohesive. His long take works *together with the cut*, as if the image were leaking out of the frame. This mutation in the long take allows Tsai to move away from a drama of events, narrative and dialogue, toward a drama of the image; or more precisely, toward the *image-event* where we see the 'leaking' image escaping and returning to the frame, after looting meaning from other frames.

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

Just as the image leaks out of the frame, so each of the four main characters wants to seep into another person's time, hence the film's title. The dead father returns to haunt the world of the living, and the mother tries to retain some connection with him by performing Daoist rites and modifying her daily routine. Xiao Kang, a street peddler of cheap watches, obsessively sets every watch and clock in sight to Paris time after his encounter with a young woman on her way to Paris who bought a dual-time watch from him. He also begins to drink French wine and watch French movies, including the Truffaut classic, *The 400 Blow*s, starring a young Jean-Pierre Leaud. Meanwhile the woman, in the different time and space of a foreign city, seems to be vaguely looking for something she never finds. At one point, she visits the famous Pere Lachaise Cemetery, where the man who sits next to her on a bench turns out to be a much older Jean-Pierre Leaud, as if he had stepped out of a film frame! Each character has their own time frame, which seeps into but never coincides with other time frames.

In the face of these overlapping temporalities, miscommunication and affective dissonances are endemic to public and private life. Sometimes the miscommunication could take on a humorous note, like the slapstick in *Tanztheater*. For example, the mother at one point excitedly drags Kang to the sitting room to look at the clock because she notices that it has been set to a different time. She thinks it was the father returned from the nether world who did it, though of course it was Kang. On the other hand, miscommunication can be extremely painful, nowhere more so than during moments of great intimacy, in the act of sex. This is demonstrated by the three sex scenes in the later part of the film involving the mother, Kang, and the Taipei woman in Paris. These scenes are presented in parallel montage, making up a kind of profane triptych. The mother has convinced herself that as a result of Daoist rites, the husband will return. On one chosen night, she dresses up, prepares to have dinner and then sex with him. He does not show up and she is left having sex with herself, in one of the most forlorn depictions of masturbation in contemporary cinema. That same night, Kang sleeps in his car, no longer able to stand his mother's bizarre behavior. He is approached by a prostitute and they have sex. After he falls asleep, she steals his case of watches. Meanwhile, the Taipei woman alone in Paris spends a lot of time in coffee bars and she gets sick drinking too much coffee. A Hong Kong woman shows concern; they become friendly and they go back to the woman's hotel. They go to bed, but the Hong Kong woman does not respond to the Taipei woman's sexual advances. Disappointed, the latter leaves the hotel with her luggage. In all three cases, the moments of sexual intimacy with another either does not occur, or when it occurs, it is a disaster. All encounters are missed encounters.

Yet, in perhaps the most unexpected twist, the moment of greatest disconnection is also a turning point. While before, Kang could not tolerate his mother's obsession with the dead father, now he finds, through his own experience of disconnectedness, some commonality with her. The final sequence of image-events sounds a similar note. The Taipei woman, after her sexual debacle, sits dejectedly next to a pond in a Parisian park in the early morning. Some mischievous boys throw her luggage into the pond. Unbeknownst to her, the dead father makes a mysterious appearance, but very much transformed, this time looking dapper and cosmopolitan. He retrieves her luggage, and the final long take is of him standing in front of a Ferris wheel smoking a cigarette (as the first long take was of him smoking a cigarette in the Taipei apartment), while the wheel begins to turn very slowly counter-clockwise. The turning wheel invokes the figure of catastrophe in a double sense, connoting not just disaster, but also more positively a turning point, and the crucial moment when one transforms into the other. Furthermore, the fact that it is turning counter-clockwise implies that time is reversible and multi-directional, enabling the overlapping temporalities, 'leaking' long takes, and image-events of *What Time is it There?*

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

Stray Dogs

Tsai himself tells us that while he was making *Stray Dogs*, he kept repeating a line from Lao Tzu: 'Tiandi Buren', which can be translated as 'heaven and earth are inhumane'. The translation is misleading because the Chinese text is not saying that the world is heartless and cruel, but rather that the order of things ('tiandi') is not *reducible* to a human order. 'Tiandi' seems inhumane or 'buren' because its point of view does not coincide with a human point of view. Hence what 'buren' points to is the need to disconnect ourselves from the images and meanings that we as human beings have given to the world. This need to disconnect from 'the interpreted world' brings up yet another aspect of the long take in Tsai. It requires us to look again at the world; it requires us to do a *double take.* To begin with then, every long take is a double take.

There is however a complication. Normally a double take ends in a moment of illumination. (I thought you had an ordinary foot, but now I see it has six toes!) By contrast, in Tsai's double takes, there is no 'a-ha' moment, no moment of epiphany. Instead, we experience a kind of negative epiphany, where we suddenly understand that we do not understand. Negative epiphany can be regarded then as *a double take on a double take* (or a *derivative* form of the double take), and it allows Tsai to present in meticulous detail the puzzling as puzzling, without having to come up with an explanation. Many scenes in *Stray Dogs* remain puzzling. Tsai's long take is 'inhumane' or 'buren' in that it does not accommodate our 'human' need for the sense of an ending.

Take the scene showing the main character, the father, doing his tedious job of holding up an advertising sign at a road junction in the rain, wind, and heavy traffic. He unexpectedly begins to sing a song with tears in his eyes. Is his song a protest against his humiliating situation? If so, why does it take the form of an old song about a soldier declaring loyalty to the emperor, where 'emperor' can only stand for the capitalist system that humiliates him? Or could it be that citizens today feel their pain, but are not clear about what causes it? In any case, there is no 'a-ha' moment.

One of the strangest scenes shows the father attacking and devouring a cabbage head. The cabbage was bought by his daughter at the supermarket. She makes it into a doll (a *cabbage-patch* doll?) and calls it 'Miss Cabbage'. Her adolescent brother suggests it should be called 'Ms. Big Boobs'. Have the children created an image or icon, with all the superstitious and fetishistic connotations attached to it? Is the father's destruction of the cabbage doll a form of iconoclasm, an instance of enlightenment and reason overcoming superstition and idolatry? Or is it a scene of virtual cannibalism or rape? Is iconoclasm itself a form of irrational violence that erupts without apparent provocation, hence not an instance of enlightenment at all? In this series of possibilities, we find double takes and double takes on double takes.

A third example is the famous long take near the end of what looks at first like an estranged couple. The woman has her back to the man. But in the course of the long take's 14 minutes, the man very gradually comes closer and puts a hand on her shoulder. She then moves away. It is an intense scene, but why does this long take have to take so long when so little seems to be happening? Perhaps it is because during the course of this long take, a unique kind of *affect* gradually comes into view, which lasts only as long as the long take lasts. If we read this long take simply as the representation of a known emotion of estrangement with some residue of intimacy still there, it is unnecessarily long. But as the documentation of the unnamable affect *estrangement-intimacy*, this long take is as puzzling as it is riveting.

The final example is also the final scene in the film. After humans have made their exit, we are left with another long take, this time of an artwork, a mural on the back wall of a ruined

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

interior, which seems to be coterminous with it. Tsai was greatly delighted to find this mural by a very interesting young Taiwanese artist, Kao Jun-Honn, who paints his landscapes on the walls of ruined Taipei buildings. The only record of this mural's existence is now the film, because the building has since been demolished. Like Tsai's long takes, the mural is mute, a mute witness to the mutations of a world that defies our interpretation. 'Tiandi Buren'.

D. Painting: Yang Ying Shang's restoration of the technical image

Vilem Flusser's account of the image complements Deleuze's in several ways. What Deleuze calls the 'electronic image', Flusser calls the 'technical image', whose main characteristics, he argues, are already prefigured in photography. What Deleuze calls the 'crisis of the movement image' Flusser calls the 'crisis of linearity'; both terms implying a need to move beyond directionality. While in Deleuze the crisis of the movement image introduced the time image, in Flusser, the crisis of linearity led eventually to the digital or technical image. I will very briefly present Flusser's seminal arguments on the technical image and its inherent volatility, and follow with a discussion of Chinese painter Yang Ying Sheng, whose recent artworks put the technical image's volatility into play.

Central to Flusser's argument is the difference between the 'traditional image' and the 'technical image'. For Flusser, the move from traditional to technical image is marked by two breaks or fundamental turning points in world culture: first, the break from image to writing and second the break from writing to data. The most important prehistoric medium was the image, one example being the Lascaux cave drawings. As medium, the image recodes a complex and confusing 3-dimensional world onto a more manageable 2-dimensional picture plane. The image functions as a map or window onto the world; it gives the world a significance but not an explanation. The world of the traditional image is enchanted; it is a world of magic and myth. However, when the image becomes more valued for itself than for its function as a map, it turns into an opaque screen that stands between human being and world. The result is idolatry. This is the moment when writing and linearity intervene, Flusser's first cultural turning point. Writing begins as a critique of idolatry, as iconoclasm. It tears down image-as-screen, gets rid of myths and superstition, to begin the project of civilization as enlightenment. It does so by arranging the 2-dimensional surface of images into lines, moving away from 2-dimensional images to 1-dimensional linearity. Linear writing transcodes the circular repetitive time of magic and myth into the linear time of history. Instead of circularity and repetition, there is beginning and end, before and after; i.e., *historical consciousness* begins. Also, conceptual thinking – the relation of cause and effect – replaces 'imaginative' thinking that resorts to sensations, myth, superstition. Explanation displaces magic, and carries out a complete disenchantment of the world. It is not enough that the world is mysteriously *significant*; it now has to be clearly *meaningful*.

The second turning point is the crisis of linearity, which is also the crisis of the contemporary age, when discursive reason begins to dismantle not only imagination, but also itself. Flusser's crisis of linearity can be compared in some respects to Adorno and Horkheimer's (1997) *Dialectic of Enlightenment*, where they show how the reason used to liberate us from myth, magic, and superstition can become, as instrumental reason, the most powerful form of domination, exemplified in different ways by Auschwitz and the culture industry. However, Flusser's conclusions about the aftermath of linearity are less pessimistic. He argues that after the suicide of reason, we find not just cultural negativity but also the *possibility* of something unprecedented emerging: a new kind of imagination, second degree imagination, and a new kind of image, the technical image, of which photography is the first

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

example. The technical image is not antagonistic to texts, but transcodes texts into images by turning the line into points, dots, and pixels, moving in effect from the 1-dimensional to the 0-dimensional and then re-synthesizing them into 'concrete images'. Technical images are 'concrete abstractions'. They mark the end of linear time, of history, of cause and effect, of meaning, replacing them with randomness, statistics and computation.

For our discussion of volatility, Flusser's key insight on the technical image is the following: on the one hand, the technical image differs radically from the traditional image, being based on 0-dimensional dots and pixels synthesized into 'concrete images', rather than on the 2-dimensional plane of traditional images; on the other hand, insofar as the technical image is *also an image*, however differently it is produced, it threatens to become the double or ghostly reincarnation of the traditional image, assuming the magical qualities of all images. This doubling and confusion of the traditional with the technical image gives the technical image a *built-in volatility*: it is both like an image and unlike any of the images we have known before; a 'poor' image. Flusser (2015: 32) writes:

> We … still have not learned to decipher these new images adequately. Our second degree imagination is still under-developed, which explains the relative poverty of such images. Undoubtedly, however, a new horizon of creativity is opening up.

As if to bear out Flusser's prognosis, we now have as one example the recent work of Yang Ying Sheng. He puts the volatility of the technical image into play in the most unlikely fashion, by turning the technical resources of art restoration into second degree imagination.

Yang is a contemporary Chinese artist based in London. He was one of a small handful of promising young artists in the 1980s with the talent and determination to leave China and continue his study of art abroad. Some years later, he duly graduated from the Royal Academy of Art as one of its top students. Because of his painting skills and knowledge of art history, he readily found work as an art restorer, restoring paintings in the British Museum and important private art collections. This was what he did the last 25 years or so, but he always thought of restoration as the 'technical side' of art and waited for an opportunity to do more 'imaginative' work. The opportunity came when he presented his first solo exhibition in the Tokyo Gallery in Beijing in September 2018.

In a short artist statement, Yang tells us how these images are produced. First, pigment mixed with varnish (the restorer's mainstay) is applied to a white board with various techniques: rubbing, chafing, tilting the board, using a spatula and so on. The material is applied in layers as a series of transparencies, and the image takes form in the over-lapping layers of transparencies. The image is then photographed and stored in a computer, photo-shopped, further manipulated, and combined with other images. The image that we eventually see is what is printed on photo-sensitive paper.

What is most striking about Yang's 'imaginative' work process is that it is not very different from the technical work of restoration. Yang's images do not represent the triumph of the imaginative over the rational/discursive. Producing these 'creative' works is as much a methodical and step-by-step process as restoring an Old Master – except for one crucial difference that has everything to do with the volatility of the technical image. Yang the restorer tries to restore a painting to its approximate original appearance. Yang the painter uses similar technical means to *restore an image that has never existed*. It is not restoration *to* what was there before, but restoration *of* what has never been there. Many of Yang's paintings resemble traditional Chinese paintings, except that they also come across as ghostly incarnations revealing them to be *anachronistic* technical images.

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

Another difference between these two kinds of restoration concerns their relation to 'pentimenti', which means literally 'repentances'. Pentimenti mark where the painter changed direction or intent and painted over these changes, but not without leaving a mark that the restorer inadvertently uncovers. However, this kind of restoration, focused on the painting's final form, has at best only a secondary interest in pentimenti. By contrast,Yang uses the techniques of restoration not to conserve a painting's final form but to bring out i*nstabilities in its process of construction.* His art project at the Tokyo Gallery consists entirely of following the movement of pentimenti rather than covering them over: the pentimenti *are* the painting.

Finally, just as Yang's form of restoration does not collude in restoring a definitive painting, so viewers' perception of his images are similarly unrestricted. Most viewers think they recognise in them human figures, or Kandinsky-like shapes and colors, or Chinese landscapes. This 'pareidolia', or the imagined perception of forms and patterns that are not there, can be related to the restoration of an image that never existed. Yang's work is possible only at the moment of the technical image, and what his art represents is a movement towards what Flusser calls the new horizon of creativity that the volatility of the technical image is opening up.

E. Literature and the quantum image

Franz Kafka

Walter Benjamin had to bring in modern physics to discuss Kafka's writings, as if only the paradigm shift in early twentieth-century science could allow him to read the paradigm shift in literature that Kafka's work represents. He quotes a passage by physicist Arthur Eddington that describes how even the everyday act of a body entering a room involves an unnoticed but highly complex and non-intuitive physics of interaction among atomic particles. "Verily, it is easier for a camel to pass through the eye of a needle than for a scientific man to pass through a door" (Benjamin, 1968: 142). Benjamin comments:

> In all of literature, I know no passage which has the Kafka stamp to the same extent. Without any effort one could match almost every passage of this physical perplexity with sentences from Kafka's prose pieces, and there is much to indicate that in so doing many of the most 'incomprehensible' passages could be accommodated. (Benjamin, 1968: 142)

This implies: to understand quantum mechanics, read Kafka.

Benjamin's proposition is not so far-fetched if we try to match a text like *The Trial* with quantum physics. In the novel, Joseph K wakes up one morning to find himself under arrest without knowing why. Every chapter circles around the law that has jurisdiction over him, a law whose nature he tries to understand. But the harder he tries, the more perplexed he becomes; a perplexity that only increases when he learns from the priest (in a late chapter entitled 'In the Cathedral') that the law operates under a strange principle that quantum theory explores as *complementarity*. Here is Kafka (1998: 219, 223): "The commentators tell us: the correct understanding of a matter and misunderstanding the matter are not mutually exclusive". The dialogue between Joseph K and the priest on the nature of the law continues: "No" said the priest, "you don't have to consider everything true, you just have to consider it necessary". "A depressing opinion", said K. "Lies are made into a universal system". And here is the uncanny parallel with Bohr's complementarity principle, which says that quantum states, like the law, can only be described through *pairs* of mutually exclusive and contradictory characteristics.

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

Thus, light is both a wave and a particle; a particle can be in two positions at the same time, i.e., in superposition; Schrodinger's famous cat is both alive and dead; the act of observation changes what is observed, a major tenet of Heisenberg's Indeterminacy Principle; quantum particles are paired or *entangled* with each other in such a way that knowing the state of one instantaneously determines the state of the other, no matter how far apart they may be, seemingly violating Einstein's relativity theory where nothing can travel faster than the speed of light. Einstein called quantum entanglement "spooky action at a distance" and was not very happy with it.

What is at stake in this comparison of Kafka and complementarity are different ways of thinking about the nature of indeterminacy or volatility. Joseph K's is the traditional view that sees the world as indeterminate because it is based on lies. He ends up 'dying like a dog'. Bohr and Kafka see the world as *indeterminate out of necessity not lies*, because the laws of quantum physics represent a paradigm shift that directs us to see necessity and indeterminacy as co-existent, thus *giving the lie* to classical understandings of physical law; just as in de Man on reading, it is the rigor that shows up the unreliability. Then there is the ambivalent case of Einstein himself. Einstein found some aspects of quantum mechanics unacceptable, though he influenced its early thinking, and he had lively arguments with Bohr about it. "God does not play dice", Einstein famously said, to which Bohr replied, "Albert, stop telling God what to do": a dialogue that resembles the one between K and the priest (with Einstein as K and Bohr as the priest?). There is a story, unfortunately apocryphal, about Thomas Mann lending Einstein a Kafka novel to read when they were both at Princeton. Einstein returned it with the comment, "I couldn't read it for its perversity. The human mind is not complicated enough" (Corngold, 2022: 135). While we do not know if Einstein was shocked by Kafka, we do know he was shocked by quantum mechanics – because he understood its possible implications all too well. As Bohr said, "Anyone who is not shocked by quantum theory has not understood it".

Bohr founded an institute in Copenhagen where the best scientific minds of the time gathered to ponder the challenges of quantum theory to traditional scientific thinking, but writers like Kafka or Samuel Beckett, who changed the way we think about writing, had to work more or less on their own. Kafka continued to write 'stories', but stories whose narrative modes do not re-introduce a superannuated form of order and consistency. Instead, every one of his major stories is organized around an image, a special kind of image where correct understanding and misunderstanding are not mutually exclusive: *a mutant image which is also its own distinctive figure of volatility*. We find in Kafka, to take the most familiar examples, figures like the law, the Castle, a giant bug, a burrow, a hunger artist, a mouse singer, a penal colony. Such mutant images display some of the weird elusiveness of quantum objects, and it is in this sense that we can speak of a 'quantum image'. We find some version of the mutant image in Tsai's long takes, in Bausch's choreography, in Yang's pentimenti. There is also the indispensable example of Beckett and his writing project.

Samuel Beckett

What is Beckett's writing project? Beckett was a great reader and admirer of James Joyce and *Finnegans Wake*, so the problem for him was how to write without writing like Joyce. If Joyce succeeded in making words mean whatever he wants, if he had arrived at 'an apotheosis of the word', Beckett's task would be to make words not mean, to make them *fail.* This is a daunting and unprecedented task, as preventing words from meaning something is almost impossible, as meanings proliferate like fleas. In *Endgame,* Clov says, "I have a flea", and

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

Hamm responds, "Catch him, or humanity might start from there all over again" (Beckett, 2006: 115). There are as many forms of meaninglessness as there are forms of meaning, and the central paradox of Beckett's writing is that *we* have to read it *carefully* to see how *meaningless* it is. Otherwise, we might think it is 'existentialist philosophy'.

In pursuit of the impossible goal of making words 'not mean', Beckett turns to the pun, a word with opposite meanings that self-destruct. "In the beginning was the pun", (not the word, as in the Gospel of John) as we read in chapter 5 of *Murphy*. The pun in Beckett is the equivalent to complementarity in Bohr with its pairs of mutually exclusive properties. A good example of a Beckett pun is his statement about his work: "My work is a matter of fundamental sounds, no joke intended". 'Fundamental' might suggest basic or foundational, having to do with first and last things. But etymologically, the word derives from 'fundament', or the buttocks, so "fundamental sounds" also means 'I'm only farting' (which offers a whole new angle on religious fundamentalism). This pairing of careful reading and meaninglessness is the textual equivalent to complementarity. Beckett the etymologist is also a scatologist, obsessed with excrement and waste, with farting, shitting, stinky breath, and stinky feet. At the same time, scatology overlays eschatology in a kind of quantum entanglement. Significance dissolves into jokes and slapstick, and conventional storytelling is replaced by repetition: of settings (always the barest), of characters (always confused), and of situations (always nowhere). If we compare Beckett's early work to his late work, we see not so much a movement towards 'minimalism' as a tendency to treat the word more and more like a quantum word-particle that misbehaves.

Central to Beckett's project is his aesthetics of failure. As early as *Three Dialogues*, Beckett writes:

> [...] to be an artist is to fail, as no other dare fail, that failure is his world and the shrink from it desertion, art and craft, good housekeeping, living. No, no, allow me to expire. I know that all that is required [...] is to make of this [...] fidelity to failure, a new occasion, a new term of relation, and of the act which, unable to act, obliged to act, he makes an expressive act, even if only of itself, of its impossibility, of its obligation. (Beckett, 2006: 563)

To fail is demanding work, and the paradox is that if you don't fail as an artist, *you are not trying hard enough*. The task then is to make of failure "a new term of relation", and to turn the double exigencies of being "unable to act, obliged to act" into "an expressive act". Perhaps the most convincing example of such an impossible expressive act is *Worstward Ho*, one of Beckett's last pieces of writing (Beckett, 2006: 471-85). The title suggests the adventures of writing as a project of failure that goes 'Worstward' not 'Westward'. For a casual reader, the text sounds like gibberish, but this brilliant short work can also be read as a retrospective of Beckett's entire career as an author, with echoes of his other texts scattered like bones across the writing. *Worstward Ho* exemplifies how Beckett makes out of indeterminacies and contradictions a new kind of writing that we are still learning how to read, just as quantum theory makes a new science out of uncertainty and experimental anomalies, and finance theory makes new markets out of aberrant price movements.

References

Adorno, T.W. and Horkheimer, A. (1997) *Dialectic of Enlightenment*. London: Verso.

Beckett, S. (2006) *Samuel Beckett: The Grove Centenary Edition, Volume III-IV*. New York: Grove Press.

Benjamin, W. (1968) *Illuminations*. New York: Harcourt, Brace & World.

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press

Blumenberg, H. (2016) *Paradigms for a Metaphorology.* Ithaca, NY: Cornell University Press.
Corngold, S. (2022) *Weimar in Princeton: Thomas Mann and the Kahler Circle*. New York: Bloomsbury Academic.
De Man, P. (1982) *Allegories of Reading: Figurative Language in Rousseau, Nietzsche, Rilke and Proust*. New Haven, CT: Yale University Press.
De Man, P. (1983) *Blindness and Insight: Essays in the Rhetoric of Contemporary Criticism*. New Haven, CT: Yale University Press.
Deleuze, G. (1989a) *Cinema 1*. Minneapolis: University of Minnesota Press.
Deleuze, G. (1989b) *Cinema 2*. Minneapolis: University of Minnesota Press.
Flusser, V. (2000) *Toward a Philosophy of Photography.* London: Reaktion Books.
Flusser, V. (2007) Crisis of linearity. *Boot Print*, 1(1): 19-21.
Flusser, V. (2015) *Into Immaterial Culture.* Metaflux.
Kafka, F. (1998) *The Trial*. New York: Schocken Books.
Lee, A. (2017) From shampoo to boats and North Pole tickets: How China's online shopping frenzy evolved. *South China Morning Post*, 11 November.
Taleb, N.N. (2016) *The Bed of Procrustes*. New York: Random House.
Virilio, P. (1998) *The Virilio Reader*. Oxford: Blackwell.
Virilio, P. and Lotringer, S. (1997) *Pure War.* Los Angeles, CA: Semiotext(e).

https://doi.org/10.2218/finsoc.8988 Published online by Cambridge University Press