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English 78: Medieval Drugs

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On Hashish, Potentiality, and Quantum Physics: Reality's Fundamental Indeterminacy

What is reality? On the surface, we seem immersed in a universe of solidity, one with determined rules and definite properties. Looking around me, I expect to experience a continuous, unwavering, non-contradictory world. For example, I assume that objects in my surroundings have a definite position at a definite time. If I hold out a pen in front of me and let go, it seems that ten times out of ten it will drop to the ground. Examining the pen closer, I can observe its shape, its color, its weight—all properties remaining constant and unchanging. If I look up at the moon, and then glance away—I assume it still exists without me. However, many traditions and disciplines (including physics) have converged on an opposite, seemingly illogical idea: the universe actually exists in a state of complete *indeterminacy*. In Buddhism, there is *śūnyatā*, emptiness, the void—the groundlessness from which our reality is constructed. In physics, there is quantum mechanics—a scientific description of a universe with no definite properties. And in perception, there is the drug—an experience that seems to aid in dereifying reality itself. In *On Hashish* by Walter Benjamin, we see how the notion of potentiality can connect them all—that in the act of unraveling, dissolving, and loosening our reality, we open up our perceived space of actuality into its underlying realm of potential.

The motions of particles on an atomic and subatomic level are dictated by quantum mechanics, a theory which asserts that a particle can be in two places at once, in two states at once. We call this simultaneity of states a superposition of states, and these dynamics are

described mathematically by a probability distribution (of being in one state/place or another)—called “the wavefunction”—embedded within the Schrödinger equation. Though this superposition and indeterminacy of nature is true on a microscopic level, once we scale up to larger systems the particles appear to “collapse” to definite states (*e.g.*, the chair has a defined position in space) with probabilities described by the wavefunction. However, a question arises: can this fundamental indeterminacy of the atomic be abstracted to the perceptual? Similar to how a particle has the potential of being in one place or another, perhaps our experiential world can be conceptualized similarly—as having the potential to occur in one way or another. Here, we turn to Benjamin and his colportage phenomenon of space, in which “one simultaneously perceives all the events that could have taken place here,” (Benjamin 28). We can understand this colportage phenomenon of space as a realm of potentiality, a space where one is immersed within the possible events rather than the “actual” ones. Entering this space appears somehow associated with enlightenment (as seen in Milarepa, the Popol Vuh, *etc.*)—thus, understanding both the experience of potentiality as well as the mechanism by which one enters it seems of crucial importance.

One way to access this superposition of possibilities appears to be through the use of the drug: “The appearances of superposition, of overlap [*Überseckung*], which come with hashish may be grasped through the concept of similarity... The category of similarity, which for the waking consciousness has only minimal relevance, attains unlimited relevance in the world of hashish,” (139). This notion of sameness, or *mêmité* as Benjamin coins it, arises from the drug experience and is characterized by the encountering of multiple potentialities at once—take, for example, the observation that “green is also yellow” (76). By *mêmité*, “Benjamin was not concerned with any perfect resemblance between one thing and another, but with the possibility

that a single thing could be in different places at the same time” (148). It is this sameness which describes the realm of potentiality, and this potentiality which is the true basis of our reality:

“The connection between the colportage and the profoundest theological intentions... [is that] the world always remains the same (all events could have taken place in the same space)” (29).

The *mêmité*, the unity that characterizes the ubiquitous nature of the potential—this is the source of divinity.

But just as the wavefunction appears to collapse to a definite state when we measure it, this realm of potentiality appears to collapse into a definite actuality in our day-to-day experience. How can we understand this process? Perhaps the superposition of states is the only thing that’s real—remarkably, the Schrödinger equation says nothing intrinsically about the collapse of the wavefunction, only the superpositions—but perhaps actuality is itself a true experience. In quantum mechanics, the phenomenon of wavefunction collapse occurs when we take a “measurement” of, or “examine”, a particle. This vanishing of indeterminacy is parallelly described throughout *On Hashish* when Benjamin comments that the Karl Kraus quote: “‘The more closely you look at a word, the more distantly it looks back’—appears [during the hashish experience] to comprehend objects as well,” (56). Under the influence of drugs, within the world of potentiality, it seems that indeterminacy disappears as soon as we closely examine it. Jung describes this phenomenon nicely in *On Alchemy*: “Obviously, the existence of the intermediate realm comes to a sudden stop the moment we try to investigate matter in and of itself” (Jung 279). The experience of a definite reality, of an actuality, seems to only arise when we address it directly—when we look at our reality with a certain closeness. Just as the particle has a position solely when we examine it, our perceptual reality remains solid only when we are looking. Further, this seems to apply to the drug itself. There is only a drug “effect”, the perception of an

augmented reality, when we explicitly reference the drug; otherwise, the effect of the drug—a submersion into reality’s formless base—is not an “effect” at all, but rather the true nature of things: “There is a hashish effect only when one speaks about the hashish” (76). Thus, it seems that the purpose of the chemical drug is merely to help us identify the underlying, primordial drug that characterizes the human experience.

Perhaps one way to understand the vanishing of indeterminacy upon inspection (in both the case of the particle and perception) is that the path to potentiality—the path to somewhat of an enlightenment, if you will—is such that as soon as you get close enough to just about see it, it disappears in front of you. A question arises: if we can only enter this realm from afar—as Benjamin puts it, “I felt how much would have escaped me if I had approached too closely and lost sight of the building as a whole” (112)—then how can we even begin to approach it? The question remains open for the moment.

We may now have an idea of *when* this transition from indeterminacy to determinacy occurs, but how can we really *interpret* this collapse of the wavefunction, the solidifying of potentiality into actuality? In physics, there are a couple of interpretations of what’s going on.

For one, there is the many worlds interpretation of quantum mechanics, by far the most popular among theoretical physicists today. This theory hypothesizes that each time a particle enters a defined state, the universe splits into multiple parallel universes, one for each of the possibilities in the particle’s previous superposition. For example, if an electron is in a superposition of being spin-up and spin-down (its two possible spin states), and I measure it to be spin-up, then at the precise moment I measure it another parallel universe emerges where the outcome of that measurement was instead spin-down. In this way, the cosmic structure fractals into infinite universes, where all possible outcomes are realized. Again, perhaps this applies not

only on the micro-scale but on the macro, perceptual scale as well. In *Potentialities* by Giorgio Agamben, for example, we see that “everything that could have happened here has happened somewhere else” (Agamben 268). If a potentiality doesn’t occur within your perception, it is often assumed to have simply disappeared, never to be seen again. But here, Agamben says that the potentiality does occur, just “somewhere else”. Where is this “somewhere else”? From a physics perspective, perhaps it is in a parallel universe, a parallel actuality, that just happens to be distinct from the actuality of our perception. Similarly, within the Undated Notes, Benjamin poetically puts it, “Images are *dwelling* everywhere // *dwelling* not here” (100). How can an image dwell everywhere, but not in the place that you’re located? Perhaps if the “everywhere” is this space of infinite parallel universes; many images dwelling in the universes in which you are not, many potentialities realized in the actualities in which you are not. Furthermore, when these potentialities dissolve into actualities, it doesn’t appear that they truly just cease to exist. In fact, it feels as if these potentialities are “content” to vanish from your perceptual world—perhaps because they “know” that they will be realized in another, parallel actuality. Benjamin expresses this sentiment precisely: “The deception vanished as deceptions vanish in dreams: not in shame, not compromised, but peacefully and amiably, like a being who has performed his service” (50). The space of potentialities always remains the same, there is no death of potentials—instead, they simply dwell in a separate part of the cosmic structure. This may connect to the fact that the colportage phenomenon of space—emptiness, the void—is often described as friendly and compassionate.

But many worlds is not the only interpretation of quantum mechanics. One such alternative is termed “relational quantum mechanics”, and it has gained increasing popularity since first being formally proposed in the mid-1990s by theoretical physicist Carlo Rovelli. In relational quantum

mechanics (RQM), the nature of reality is fundamentally characterized by the relationship between the observer and the system. For example, let's take again the electron in a superposition of spin-up and spin-down. Say that I make a measurement of the electron, and it again collapses into the spin-up state. Then, according to RQM, the particle is only spin-up *in relation* to me—in reference to some other observer, the particle may still be in a superposition of spin-up and spin-down. This is a generalization of relativity, in which—for example—one can only measure speed with respect to another object (*e.g.*, if I run on a ship, I have different velocities relative to the ship, the land, and the sun). As Rovelli himself puts it in his book *Reality Is Not What It Seems: The Journey to Quantum Gravity*, “all variable aspects of an object exist only in relation to other objects... there is no reality except in the *relations* between physical systems” (Rovelli 135). If our quantum reality is always inherently undetermined, and it is only in these relations that definite states emerge, then how can we understand our perceptual reality? Perhaps through the lens of interconnectedness. It appears that complete interconnectedness, infinite compassion—often described in Buddhist accounts of enlightenment—may be opened up through the drug experience. Jean Selz describes the “connections by which the opium was attaching us to every single thing” (154 – 155). Similarly, Benjamin writes that during the hashish experience, “nothing more of the person remains than an unlimited capacity, and often an unlimited propensity, for entering into the situation of every other in the cosmos, including every inanimate object” (143). How can one enter into the “situation of every other in the cosmos”? By accessing the colportage phenomenon of space, a state of infinite interconnectedness. A space in which—in light of RQM—reality is defined by its connections, its relations, rather than the things themselves. Further, it is the emptying of selfhood that allows one to seep into this realm of possibility, and realizing an experience of the potential helps us to put ourselves in the place of others. This is elaborated with, “The virtuoso of

empathy does not in fact step outside himself. His masterstroke consists in having so emptied out his own ego, and made it so free of all ballast of the person, that it feels at home in every mask” (142). However, is it the experience of potentiality that opens up the compassion, or the experience of compassion that opens up the potentiality? Perhaps both. Regardless, it seems that to truly enter this realm which is “characteristic of a divine being” (46), we should approach it on both fronts.

Before proceeding, it may be worthwhile to momentarily step away from the physics in order to further investigate the *mechanisms* by which the space of potentiality is unveiled. One such method appears to take the form of *flânerie*, or wandering. It is in this act of roaming—without explicit pursuit of a goal—that we can meander our way into the realm of the potential. As Benjamin very directly expresses, “We know that, in the course of *flânerie*, far off times and places penetrate the landscape of the present moment” (139). Through wandering, alternative potentialities envelop our perception. This is stated even more clearly in the introduction: “the *colportage* phenomenon of space is said to be the *flâneur*’s basic experience” (x). So how do we really enter this space of possibility, the *colportage* phenomenon of space? We wander. We *flâneur* in the utmost sense of the word. But how can one actually go about *flânerie*, how can we truly aim to maneuver aimlessly? One way appears to be through the drug experience itself. As Benjamin so beautifully puts it: “The figure of the *flâneur*. He resembles the hashish eater, takes space up into himself like the latter. In hashish intoxication, the space starts winking at us: ‘What do you think may have gone on here?’ And with the very same question, space accosts the *flâneur*” (141). Thus, it seems that maybe it’s the drug that can direct the undirected, allowing us to loaf through our perception and dissolve into the potentialities from which the world is constructed.

Lingering on the nature of *flânerie* a bit longer, there seems a few adjacent concepts that may further reveal the process by which the wanderer falls into the underlying space of potentiality. One such experience is that of doubt, or of indecision: “Just as waiting seems to be the proper state of the impassive thinker, doubt appears to be that of the *flâneur*... [it is] the feeling of indecision which is so characteristic of hashish intoxication” (139). In order to truly wander in aimlessness, one must be in an extreme state of indecision, of doubt—in a way, it is as if the *flânerie* cannot “decide” on an actuality, and thus they become immersed in potentiality. Perhaps it is only in doubting reality that we can actually dereify it. This experience of doubt further connects to the contradiction of reason that is so characteristic of *mêmité*. Within intoxication, “every truth points manifestly to its opposite, and this state of affairs explains the existence of doubt. Truth becomes something living; it lives solely in the rhythm by which statement and counterstatement displace each other in order to think of each other” (139). Thus, the experience of doubt is what allows the contradictory to coexist, potentialities to arise in a superposition, a particle to be in two places at once. It is when reality “frees itself from the principle of reason” (Agamben 259) that we descend into the world of possibility. Further, “In a state of intoxication, the ratiocination is loosened, unraveled, not dissolved; with the emptying out of personality, there is a diffusion of perspective” (*ix*). Thus, we come full circle: by cleaning out ourselves of personhood, we can access not only the realm of infinite compassion, of complete empathy, as discussed earlier, but can liberate ourselves from the grasp of reason—both of which grant us access into divine indeterminacy itself: potentiality.

To this point, we have described *when* the collapse from determinacy to indeterminacy occurs, the *interpretations* of the nature of that collapse, and some *mechanisms* by which we can collapse our own perception. But *how* does it really happen, from a physics perspective? And

adjacently, how does actuality truly emerge out of potentiality? Here, we can turn to the age-old question: “how does something come from nothing?”, which seems somehow parallel to “how does actuality come from potentiality?” The “nothingness” from which the universe seems to have emerged feels similar to this space of potential, the colportage phenomenon of space, that we have compared to the emptiness of Zen Buddhism throughout. We see this parallel clearly when Benjamins writes, “In the end, things are merely mannequins, and even the great moments of world history are only costumes beneath which they exchange glances of complicity with nothingness” (137). Here, the historical events—or actualities—that occur are really “mannequins”, beneath which the true reality—the space of potentiality (described here as “nothingness”)—lies. Thus, getting to the bottom of this adjacent question of something from nothing seems of crucial importance for our inquiry.

As a brief intermission, it is important to clarify the nature of this “nothingness”—in both physics and Buddhism. Here, nothingness is not a complete absence or blankness—rather, it is a framework of potential. From a Buddhist perspective, this emptiness or nothingness is “not a simple negation of beings, not a formula for nihilism or scepticism. Rather, it represents an utmost affirmation of being” (Han 32). Similarly, in physics, the “nothingness” from which the universe emerged cannot be understood as a complete absence. Instead, it is a quantum framework in which—though space, time, and the universe itself may not exist—the laws of quantum physics dwell (*i.e.*, quantum fields). One thing about these laws is that they dictate inherent uncertainty among pairs of certain quantities; this is called the Heisenberg Uncertainty Principle, and applies most famously to position and momentum, but also to energy and time. Thus, on a small enough time-scale, there are random fluctuations in the energy of a system; this means that even an empty, energy-less quantum field can fluctuate with energy and—as mass is

a form of energy (*i.e.*, $E=mc^2$)—such a quantum fluctuation can give rise to matter itself. So, in summary, a small enough time-scale causes a fluctuation of energy that effectively creates something (matter) out of nothing (an empty quantum field). How though can we connect this physical process to the perceptual process of actuality from potentiality? A hypothesis arises: if a short, fast time-scale gives rise to matter, to actuality, perhaps a slow, lengthened time-scale could allow one to go in the opposite direction—to access the underlying nothingness, the realm of potential, the *apeiron*. And within the drug experience, it appears that this lengthened time-scale does, in fact, manifest itself: as time-dilation.

Time dilation is a common experience to many types of drugs. Take, for example, Benjamin's experience that, "I think three quarters of an hour have already passed. But it is only half an hour" (47). How does this experience help us to perceive nature's fundamental indeterminacy, however? Again, we turn to *On Hashish*: "Against the background of these immense dimensions of inner experience, of absolute duration and immeasurable space, a wonderful beatific humor dwells all the more fondly on the infinite questionableness of everything in existence" (112). It is this experience of "absolute duration" that allows one to become aware of the "infinite questionableness of everything in existence", the undetermined nature of reality, the intertwined threads of potential that form our actuality. Thus, it seems that this altered sense of time is yet another mechanism by which the drug can assist our entry into the underlying realm of indeterminacy.

Within the drug experience, however, we also see some things occur on *rapid* time-scales—usually in the form of temporary, short-lived "hallucinations". How can we understand these ephemeral, transient perceptions in the context of physics? Perhaps this fluctuation of perception is analogous to the quantum fluctuations discussed earlier. Take for example the

following description of reading while on hashish: “In any case, the perception of the letters is disrupted by a scotoma, which causes them to flicker” (74 - 75). Here, there is a flickering of perception that gives rise to a perceptual actuality, just as a fluctuation of energy can give rise to a physical particle. Similarly, Benjamin says that “None of these [perceptions] ever condensed into anything like permanent realities. Just as in other experiments, there was at moments a short-lived hallucination, though no sooner would it appear than it would be immediately divested of its reality character” (42). Though we can understand these perceptions as similar to quantum fluctuations, is there an actual material analog—perhaps a particle of an ephemeral nature, popping in and out of existence just like a hashish “hallucination”? In fact, there is: the virtual particle. Just as we described the creation of something from nothing earlier, virtual particles can also arise from an “empty” quantum field, existing for an extremely short time before collapsing back into the nothingness. In fact, this is what occurs most often during the excitation of an “empty” quantum field—virtual particles arise, exist for a few moments, and then vanish, leaving behind the emptiness from which they emerged. Thus, perhaps the hallucinations of the hashish experience are the virtual particles of our perception. As further elaborated through Benjamin’s experience: “About the images themselves I cannot really say very much here, because of the tremendous speed with which they arose and then vanished again; moreover, they were all on a very small scale” (60). These images can be understood as “virtual actualities”, emerging from perceptual fluctuations in the underlying space of potentiality. Similarly, virtual particles emerge due to fluctuations in the underlying space of nothingness, the “empty” quantum field. Remarkably, it seems that once again, physics and our perceptual experience agree.

Throughout this inquiry, we have drawn many parallels between fundamental physics and the drug-induced experience of potentiality; our connections have helped us to further understand

each of the phenomena embedded within each. However, on both fronts, one crucial question remains wide open: what is the underlying cause of the fluctuations? In physics, we can say that the fluctuations emerge from the Heisenberg uncertainty principle relating time and energy, but where does that law come from? Physics may help us to understand the phenomena of our universe, but what is the origin of the laws themselves? And why do the laws manifest themselves in the specific way that they do? Similarly, what is really going on when we enter the space of potentiality? If it is induced by the drug-experience, then why? If it's the result of time-dilation, then why? What about flânerie? Doubt? Contradiction? Compassion? Interconnectedness? Fundamentally: Who set up our reality the way that they did? What is the absolute cause of our cosmic structure? Why does it take the form—or formlessness—that it does? And what truly is actuality, determinacy, definiteness, if it's all constructed on top of “the wind”?

Perhaps we are not the ones on drugs, but instead we are the drug—the drug that reality takes in an admirable, yet futile, attempt to convince itself that it is real.

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