# A Conceptology of Technology Philosophy - Top 20 Technology Philosophy Concepts by Melanie Swan, Technology Philosopher

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This is the articulation of a conceptology that I have developed to further substantiate technology philosophy. Technology philosophy is the field of philosophy engaged in the practice of using philosophy proactively to improve the rigor of our thinking as we create new technology that opens up possibilities for humanity and the world. Technology Philosophy is specifically not the more reflective passive chronicling of the 'philosophy of technology' or the 'philosophy of science,' but rather technology philosophy is prescriptive, visionary, affirmatory, and proactive.

Why are concepts important? As Deleuze suggests, the output of the scientist is quantitative characterization, the output of the artist is subjective experience, and the output of the philosopher is concepts. Far from being a dusty old topic of the past, philosophy is as vibrant as ever as there are many possibilities in concept innovation that can facilitate a heightened understanding of the world. Taking Heidegger as a model of going to the essence of any topic, thinking it through more primordially, we can start by asking what is a concept? The dictionary definition of a concept is an abstract idea, a general notion. However bringing specific concepts to mind might not be something we are familiar with doing on a day-to-day basis. Starting to brainstorm some concepts, there seem to be different kinds. Some seem practically applicable to the domain of personal experience, how individuals might understand themselves in relation to the world, concepts like karma, flexibility, acceptance, empowerment, self-actualization, extensibility, justice, self-identity, payback, barriers, rules, deferred gratification, and creating community. Another class of concepts seems applicable to phenomena greater than the self, ideas that model what is going on in the world like sustainability, globalization, digital divide, the bottom of the pyramid, the last mile, plasticity, the occupy movement, wearable electronics,

the wireless Internet of things, augmented reality, healthspan, quality of life, and crowdfunding. For Deleuze, there is another class too, of philosophical concepts that are more extensive than personal and global concepts - a philosophical concept is not an identity condition or proposition, but a metaphysical construction that defines a range of thinking. Some examples of philosophical concepts are Plato's ideal forms of things, Kant's doctrine of our cognitive faculties, and Descartes's cogito - the philosophic principle that one's existence is demonstrated by the fact that one thinks. As a branch of philosophy, in technology philosophy too, concepts too are defined in this Deleuzian metaphysical construction that defines and invites a range of thinking. I will now go through 20 new ideas in the conceptology of technology philosophy, more or less in alphabetical order.

# **Applied Philosophical Thinking**

The first topic is applied philosophical thinking which is relevant since the main activity of most academic philosophers today is exposition and contextualization. It might be better to call the academic practitioners in the field of philosophy today 'scholars of philosophy' rather than philosophers who are actually charged with the conduct of new thinking. There is value in exposition; that is in studying the old texts and explaining them, trying to figure out what they mean, but the second step is missing. There is little effort to apply the ways of thinking of philosophers to the problems of our day, especially beyond philosophy, and this is critical. It constitutes the unlocked value of philosophy and is something we try to do proactively in technology philosophy. There is a branch of philosophy called applied philosophy but it is not applying philosophical thinking models or improving the rigor of our thinking by using philosophical methods, but rather finding support for largely political and ethical agendas in philosophy, for example using Deleuze to justify environmental practices. Further, perhaps the biggest unrealized value in applying philosophical thinking methods is on the affirmative side, to positively and visionarily create and structure our thinking about making ourselves and our world in the modern era, as opposed to only thinking of applying philosophical thinking models in the sense of the more negative evaluation and destruction of logic and arguments. Perhaps the biggest relevance of W today is in the greater Application of Philosophical Thinking Methods. An under-realized value of philosophy is in applying philosophical thinking methods affirmatively, to positively and visionarily create and structure our thinking about making ourselves and our world in the modern era. Applied Philosophical Thinking.

# Anti-Self, Post-Self, ManySelf (multi-self, split/shared self)

The anti-self connotes the possibility of a wider ecosystem of self/other. At present, we have the default thinking of intelligence, consciousness, and subjective experience being in individual packages or bodies that we call the self and the other. This rigid formulation of intelligence, experience, and identity could be a temporary convention as digital technologies allow the development of increasingly enabled and self-volitionary digital personae and mind resource-sharing with online projects and communities. In the technology philosophy of the future, we can start to envision more malleable flexible concepts of intelligence and identity. In fact, the self with which we so strongly identify is a concept that has only arisen recently in the scope of human history. That the current notion of the self evolved in lockstep with the development of the sizeable and complex cultures of modernity is grounds for the notion that the self is a malleable concept subject to evolution itself. We can see the self as merely the current meatspace holding tank for an individual brain in a future which might include a variety of biological and

electronic copies, with different portions permissioned and shared out to groupmind projects, where if appropriate, idea credit-tracking could be more rigorous than today's mechanisms, and likely completely automated. Other potential future challenges could arise such as mind theft, and mind viruses and require backup, restoration, difference calculating, antivirus software and other counter measures. One significant implication of a more malleable concept of self, and the notion of multiple partial and full digital copies of self is that subject-object differences start to fade too, which puts us in a completely new post-post-Kantian philosophical era. **Anti-Self, Post-Self, ManySelf.** 

# **Assertion-free Philosophy**

Assertion-free philosophy is the freedom to think without propositions, the freedom to think in the open domain of unbounded upside without the need and philosophical tendency to structure one's thoughts around assertions, claims, and propositions. It is easy to tend to the more tangible world and activity of proposition-formation and proving, but the most interesting and essential philosophical questions cannot be packaged neatly into propositions and are themselves situated in a more expansive dimension. Assertion-free philosophy helps get away from analytic philosophy's propositional imperative. In philosophy, assertion-free thinking is to propositions as in science, systems-level thinking is to reductionism. Assertion-free thinking was inspired as the philosophical analog to the trend of moving from structure to unstructure or anti-structure visible in fields such as artificial intelligence in the focus on model-free methods and intuitive intelligence as opposed to enumerated knowledge elements, and similarly in the big data field, in the move from representational databases to noSQL, mongoDB, and bigtable data stores. Proposition-free philosophy is more expansive than the analytic philosophic frame allows, it is the Heideggerian right, free, enframing, and enabling relationship that one should have with thinking, and a Rancierean method of equality, an emancipation through a new mode of experience that is the expansive unbounded upside of thinking. Assertion-free philosophy.

# Axiologie (ie)

Traditional axiology is the study of the nature, types, and criteria of values and of value judgments. Axiology includes valorization, the according of value (or lack of value) to things, and aesthetics, relating to the beauty or pleasing appearance of things. Axiology is a third major branch of philosophy often overlooked in favor of its higher-profile cousins metaphysics, dealing with the nature of existence, and ethics in the 1.0 sense, dealing with rules of behavior based on ideas about what is morally good and bad. Here I am extending axiology to axiologie (ending in ie) in a technology philosophy sense to denote the new kinds of valorization concerns that are present in the shift to an Economy 2.0 that could be highly-automated, post-scarcity for material goods, multi-currency, and affinity-based. The multi-currency dimension of the world can be seen already as individuals are increasingly accumulating value in alternative non-monetary currencies such as reputation, authority, attention, intention, time, ideas, creativity, and health. This multi-currency aspect of Economy 2.0 is variously called the gift economy, the reputation economy, the attention economy, and the intention economy. Science fiction has already envisioned future economic worlds where reputation points are the only currency and vary dramatically up and down like video-game points, typically viewable in virtual reality goggle Heads-up-Displays like Cory Doctorow's whuffie-driven economy in 'Down and Out in the Magic Kingdom.' Technology philosophy's axiologie (ie) deals with the acknowledgement, valorization, visibility, invisibility, modes of understanding, transferability, storage, investment,

and use of alternative currencies. Axiologie connects in the areas of fungibility and abundance to updated aspects of Marxism and communization, and to a later concept discussed here, Unbounded Upside, the range of non-linear positive possibilities stretching upwards from baseline conditions in the world of our future. **Axiologie.** 

# **Biotechnicity**

Biotechnicity is the idea that no longer is technology (technicity) merely external objects at a distance, but rather technology is becoming increasingly linked to, intertwined with, and inseparable from biology. The codependent interconnection of technicity and biology is both revealing the true nature of biology, human and beyond, and serving as a tool for how humans interact with themselves and the world, a sort of biotechnical interface or biotechnicity. Some examples include nanoparticle drug delivery, wearable electronics, smartphones, memory prosthetics, cochlear implants, synthetic biology, tissue engineering, and regenerative medicine. Whereas biotechnicity 1.0 can be defined as the general idea of applying technology to biology, biotechnicity 2.0 can be seen as the proactive directed interactive process that humans are having by engaging with technology in contexts relating to biology. **Biotechnicity.** 

# Comprehensivitie (Anti-Anecdotalism)

Comprehensivitie is the notion of comprehensiveness or systems-level thinking in philosophy. Just as science has had to move away from the traditional reductionist approach to tackle a new class of complicated problems like cancer, aging, preventive medicine, weather modeling, molecular behavior, and quantum mechanics which require more of a systemic understanding, so too could philosophy benefit from being more overtly comprehensive and also by denouncing anecdotalism. There seems to be a prevalence of anecdotalism in philosophical thinking. Indeed it is natural to see ideas from philosophy as being applicable to many areas including whatever area one might be considering, but there is a sense of cherry-picking, finding anecdotal evidence that supports an agenda, and the risk is inaccurate and overwrought application; the stretching of a philosophical topic to cover a situation. Whereas we are aware of and call out these kinds of rationalization and justificatory biases in science, for example, knowing that it is easier to search for something under the light where we can see but knowing that the whole search space is much larger, we are loth to address thinking biases in the field of thinking, philosophy. For example, philosophers may see certain things happening in neuroscience and try to describe them philosophically, but they have generally picked a few examples, and not endeavored to look at neuroscience as a whole from its own view and at the concepts that are arising there and coalescing and being used by practitioners. The biologist's biology and the philosopher's biology do not look the same, the philosopher has typically not acquired a comprehensive understanding of the field, just picked a few aspects and could therefore benefit from the anti-anecdotal more systemic view of comprehensitivitie. Comprehensivitie (Anti-Anecdotalism).

# **Digital Personae**

Digital Personae is the next node in the progression of literary personae and Deleuze's conceptual personae. In theatre or literature, a persona is the person who is understood to be speaking or thinking or writing. The persona is distinct from the author; it is the voice chosen by the author for a particular artistic purpose, a mask. In philosophy, where philosophers create and use concepts, the land of concepts can be seen as being peopled by "conceptual personae" which operate the conceptual machinery. The conceptual persona can also function as a tool, as a voice

outside the philosopher's own, possibly to say what the philosopher cannot but more importantly to discover what the philosopher, in limited human form, cannot. Digital personae too can be understood in the two aspects of conceptual personae. First, avatars or digital profiles do the heavy-lifting and representation of physical-world people in digital worlds like social networks, virtual reality, and video games. Second, digital personae may be able to surpass human limits in expanding the self and the knowledge and experiences available to the physical-world self. Further, interesting differences may arise between digital personae and physical-world personae (meatspace personae) as introspection engines use big data and social data online to build digital personae with ever-greater levels of fidelity (see concept: fidelitie) by automatically eliciting individual's values, preferences, behaviors, and intentions. **Digital Personae.** 

# **Digital Fidelity (Fidelitie)**

Related to digital personae is digital fidelity. Digital fidelity is the measure of how fidelitous a digital representation of someone is compared to their physical-world self. The concept of digital fidelity already exists in the multiple personae we have in digital contexts and the physical world, and in the farther future, there could be many more situations such as the zombie upload problem. The zombie upload problem is the idea of interacting with digitized individuals, where they seem to be conscious and having their own subjective experience, but how would it be possible to know? How would it be possible to determine whether uploaded mindfiles are fidelitous to the full range of inner experience of a being or just running in surface-level zombie mode that reasonably simulates external personality characteristics (a possible cost-savings measure by server farms and mindfile operators)? Personality and subjective experience fidelity could be a key feature on the quality assurance checklist in the potential case of digital mindfile uploads. **Digital Fidelity, Fidelitie (ie).** 

# **Empiphanic**

Empiphanic is empathy + epiphanic (as in an epiphany, a sudden manifestation of the essence or meaning of something), in this case an empathic epiphany, triggered by being tuned into the global emotional ethos of humanity, an epiphany realized by connecting with others and understanding or sharing sentiment or experience. A related nuance is being tuned into subjective experience as opposed to objective experience, subjectively experiencing the world of qualities, feeling, and sensation, and the idea of having a subjective epiphany. **Empiphanic.** 

# Epistemology 2.0, Epistemologie (ie), Global Epistemologies

Epistemology 2.0 or Epistemologie (ending in ie) is specifically multivocal, multimodal, and multiformat, a multiplicity in every dimension. It takes into account that we have been using the same traditional historical structure for knowing and recognizes alternative structures, *and* that knowing is not the only valid goal. Epistemology 2.0 includes Bergson's true freedom of freeing the knower from knowing and having to know - we can simply tune into our subjective experience to a greater degree and feel comfortable in being rather than knowing. Bergson continues in Epistemology 2.0 is another new concept, **quantiqual**, existing simultaneously on the quantitative and qualitative level. Epistemology 2.0 includes Ramon Grosfoguel's formulation of alternative epistemologies, ways of knowledge acquisition developed outside of the exclusive preserve of the Western university in other cultures, voices, and value systems. There is grounds for Epistemology 2.0 in Ranciere's poetics of knowledges as a method of equality, meaning that all knowledges are equal, and that the truly emancipated individual can

understand multiple knowledges or sense-making perspectives of the world. **Epistemology 2.0**, **Epistemologie (ie)**, **Global Epistemologies**.

#### Ethics 2.0

The traditional Ethics 1.0 consists of evaluating behavior against principles, where behavior inevitably falls short. Instead of this negative judging circumscribing approach where achieving baseline is the only best outcome, Ethics 2.0 uses principles to enable behavior in an affirmative and forward-looking way to create empowered expansive lives. We can imagine an **Ethics of Perception** and **Ethics Modules** where ethics modules would be specifically designed into our technology objects, rather than being implicitly designed as technology ethics is now. Ethics Modules could offer different kinds of access to and use of 'objective' or adjusted reality perceptual frames. There could be POV HUDs re: values elicitation, bias adjustment, aesthetics, and POV-sharing with others, group POVs, and mentor POVs. Other aspects of future Ethics 2.0 could include controlled neural manipulations via nanotechnology and automated in-brain perspective-extending biosensors, creating new kinds of exosenses. **Ethics 2.0.** 

# **Fourth-person Perspective**

Fourth-person Perspective is the next node in the first, second, and third-person perspective progression that has already been articulated and understood. Fourth-person Perspective is the distinctly new perspective of ourselves that our encircling always-on personal information climates are providing to us. The persistent global Internet-connected technological gadgetry of the contemporary era gives us an objective perspective on subjective experience that was previously inaccessible. The fourth-person perspective is a non-human eye that extends the cinema gaze and the thought-image to the technology-image in important new ways by capturing, processing, and delivering objective metrics regarding formerly unavailable subjective experiences in areas such as happiness, memory-functioning, biophysical reaction, affect, perception, and mental performance. The fourth-person perspective helps create a conceptual identity, a container for augmented, alternate, and multiple realities, and cognitive nanorobotic perceptual enhancement technologies as discussed in the Ethics 2.0 concept. Fourth-person Perspective.

### **Grounds-to-Come**

Grounds-to-Come is a phenomenon that happens in both thought-development and technology-development where the new ideas come faster than the grounds that support them. Grounds-to-come is the situation where something exists but there are no grounds for it, and there is some assumption and anticipation that it will be possible to fill in grounds later, possibly by working through the concept in more detail. The Grounds-to-Come concept is inspired by the French philosopher Quentin Meillassoux's book After Finitude: An Essay on the Necessity of Contingency where the philosopher may sketch ahead in thinking and possibly fill in grounds later. In fact, it is not clear in the Meillassouxian view that grounds are necessitated. **Grounds-to-Come.** 

# **New Media Thinking**

New Media is a term that means digital devices and content which is available on-demand, and is possibly interactive and user-created such as CD-ROMs, DVDs, video games, Internet-based video, and websites. New Media Thinking is the seemingly self-evident responsibility that is an

inherent property of any new medium – not just to use, but to think and express in a new way that is engendered by, congruent with, and extended by that new medium. The risk is that the new medium is cheapened and rendered anachronistic if the new media commentary is the same as that in the old media. The great Heideggerian enframing enabling background of the new medium is the imperative to think comment in new ways, to understand what the new media enables. Many new media expositions and have received the scandalous label of not being art (in a bad way!) They have fallen short since the commentary or message has not evolved with the dynamic modernizing *esprit* of the medium, for example, live tissue-engineered hymen cells that make the same usual feminist commentary which comes across flattened; the commentary should be updated with the medium. **New Media Thinking.** 

# Principia Posthuman

In the endeavor of technology philosophy, and futurist philosophy more generally, is the need for a **Principia Posthuman**, a new thought paradigm that envisions and proactively sets forth a philosophical framework for understanding and architecting the fast-emerging potential era of the posthuman. After the human, there is the transhuman, a human with radically altered capabilities per augmentation technology that is the transition to the posthuman, the posthuman being so radically augmented as to be a moment of speciation beyond the current human. Necessarily generalizing, the history of philosophy can be seen in three major eras, first the ancient Greeks, Chinese and Indian philosophers, second the classical and modern era of Kant, Nietzsche, existentialism, and Radhakrishnan, which is now giving way to a third era, that of posthuman philosophy. Recent movements have helped pave the way: for example, existentialism, modernism, post-modernism, post-modernism, structuralism, poststructuralism, neo-post-structuralism, post-subjectivity, deconstruction, the avant-garde and the neo-avant-garde. However all available philosophical thought is currently insufficient as a guide to helping us structure and build the different possible flavors of our posthuman future, and this is the project of the Posthuman Principia. Some of the key topics in the futurist research agenda of the Posthuman Principia include thinking through many traditional topics that may evolve in our technologized future: dichotomies of the subject/object, self/other, and mind/world, and other concepts like personal identity, mortality, language, meaning, being, and ontology. Technology is triggering shifts that require nearly all of these concepts to be extended and re-thought. For example, taking the notions of language, the self, and subject-object differences, it is not at all radical to envision a post-lingual, anti-self/post-self, and post-subject object digital future. As one example, there are already starting to be post-lingual communication mechanisms such as body language readers and holographic thought maps that could greatly supplement and replace language as the only (and hopelessly narrowband and mediated) communication mechanism. Principia Posthuman.

# **Quantiqual - Qualiquant**

Quantiqual is a contraction of quantity and quality, the notion that objects and experiences may exist simultaneously on the quantitative and qualitative levels, and that we can possibly understand and be attuned to the experience of objects and situations simultaneously in a quantitative and qualitative manner. Quantitatively in that features and aspects such as time, size, distance can be objectively measured, tracked, and recorded, and qualitatively in the Bergsonian sense of the inner subjective experience of qualities, sensations, and feelings which cannot be

objectively measured. The notion of quantiqual is inspired historically by the French philosopher Bergson and the contemporary Quantified Self movement. **Quantiqual.** 

# **Reality Gap and Gapping**

The Reality Gap is a straightforward concept for the gap between our internal representations and experience of life in our heads and the actual reality. Reality-gapping is the corresponding verb for checking, noticing or not noticing the gap, promoting a gap, realizing that there is a gap, and/or for correcting, extending, or initiating a gap. From a technology philosophy perspective, with feature-enabled Ethics 2.0 perceptual interfaces in our reality-mediating technology, there could be different kinds and sizes of reality gaps - a multiplicity of reality gaps. Video games and immersive online reality entertainment experiences could offer interesting new reality-gapping experiences. Wow – check out that reality gap! Please mind the reality gaps! **Reality Gap and Reality-Gapping.** 

# Repticity (Representational Authenticity)

Repticity is the contraction of representation and authenticity, a measure of the degree of authenticity in a particular representation. Repticity is a very similar concept to digital fidelity or fidelitie (ie) which is the measure of how fidelitous a digital representation of a person is compared to their physical-world self. Repticity is a larger category which includes the digital fidelity of the representation of a person, and is more usually applied to objects or non-person things. Repticity is a measure of the accuracy or correspondence of a representation to that which it is representing. Representational accuracy is a growing concern at two important levels, first, in the world of digital replication and digital generation, where it is increasingly impossible to determine the genesis of a given digital object – for example, is a certain image a picture of a real-life cell, a picture of a synthetically-generated cell, or a computer-generated image of a cell? The inability to tell how something was generated destabilizes our notion of reality, and starts to make us appreciate reality multiplicity, that there are many different kinds of real – physical reality, synthetic-generation, digital copies, and digital simulations. The second and more fundamental level at which representational accuracy is a concern is in the new contexts of the unrepresented and the unrepresentable – where no physical world example exists against which representational accuracy can be measured. One example is the concern of the degree of accuracy in representations that may be obtain in the context of big data which is unrepresented and not possible to represent in the physical world yet does have a physical existence. Another example is de novo creation, say in synthetic biology and molecular design, where the formerly non-existing is being created, and the question is what can and should be said of the accuracy of the representation in a new creation. Repticity – Representational Authenticity.

# Tri-Level Experience / Multi-Level Experience

Tri-level experience is the notion that our experiences increasingly have at least three dimensions: a quantitative element of science or technology, a qualitative element of aesthetic design, and a conceptual meaning-making or self-expression element. In the vein of the already-outlined conceptology here, tri-level experience is quantiqual and conceptual. The notion of tri-level experience takes what are for Deleuze the three key modes we have for making sense out of reality, the quantitative, qualitative, and conceptual, and understands them together simultaneously in our experience of the world. Scientists are charged with making quantitative characterizations of the world, artists with qualitative experiences, and philosophers with

concepts. What we start to see is that the most successful contemporary products, services, and experiences are delivering at all three levels, for example the Garage Band software for learning and playing music in groups: quantiqual plus self-expressive. **Tri-Level Experience.** 

# **Unbounded Upside**

Unbounded upside is a concept applicable to future economics and the economy 2.0, but also the whole future more generally. So far, in much our human endeavor, we have been oriented around a baseline and the goal of maintaining, achieving, or reachieving that baseline, completely ignoring all of the possible outcomes on the positive side of the base line. In finance and credit, loans are made, and the best anyone can hope for is to regain baseline, to have all of the monies repaid, or to achieve an as perfect as possible credit score. We do not even have terminology for the conceptual opposite of credit, but what would a society based on debit, positive credit, or paid-forward karma look like? One vision is considering that in our societies, the financial surplus and resources already exist, and could be apportioned away from bureaucratic programs to instead pay-forward every person a sustainable living allowance each month or year. This would shift the focus to unbounded upside as everyone wonders what can they do not what they have to do for survival. Regaining baseline is also the paradigm in other areas such as medicine and psychology, cure is returning a pathology to baseline, not going beyond baseline to improved wellness, enhancement, or future prevention. The advent of new fields such as Positive Psychology in the 2000s helps to expose the pervasive baseline mentality and potential expansions therefrom. As it has been easier and more obvious to focus on reductionist practices in science, so too has been easy and a clear view to focus on the territory below baseline because it is a bounded defined area, whereas above baseline is open and unbounded, in other words, pure opportunity in the most Deleuzian and Bergsonian sense. Unbounded Upside.

In summary, this has been the articulation of several new concepts in technology philosophy that may be helpful in how we are thinking about and making our modern world, including grounds for doing so, goals and objectives, seen and unseen impacts, accessibility, and how possibilities are opened up for humanity. The concepts are: Applied Philosophical Thinking, the Anti-Self, Post-Self, or ManySelf, Assertion-free Philosophy, Axiologie, Biotechnicity, Comprehensivitie or Anti-Anecdotalism, Digital Personae, Digital Fidelity (Fidelitie), Empiphanic, Epistemology 2.0 Epistemologie (ie) Alt.Epistemology and Global Voices, Knowledges and Epistemologies, Ethics 2.0, Fourth-person Perspective, Grounds-to-Come, New Media Thinking, Principia Posthuman, Quantiqual or Qualiquant, Reality Gap and Reality-Gapping, Repticity (Representational Authenticity), Tri-Level or Multi-Level Experience, and Unbounded Upside.