‘Patatime

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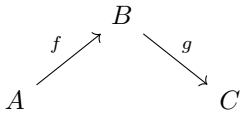
Abstract. Modeled after pataphor, ‘patatime concerns a hinge between incompatible ontologies—a metatime relation on one side, time on the other. In this formalism, the grandfather paradox arises from metatime without time, the bootstrap paradox as a Möbius strip between time and metatime. Templexity is shown to be a variant of ‘patatime, and various quasi-paradoxes and paradoxes of self-reference shown to be pataphorical.

Introduction

‘Pataphysics is the science of the trans-ontological: it finds imaginary solutions to bridge incompatible worlds (ontologies). As such, ‘pataphysics can only be a science of the particular; otherwise, these worlds would be subsumed under a more general ontology—thus *intra*-ontological, and not truly trans-ontological.

Its most radical concept is *pataphor*: a ‘metaphor-squared’ that leaps between ontologies, without any reduction or hierarchy.[1] So: if continental theory is an exercise in overcoming binary oppositions—conceptual distinctions that split our thinking into two separate ontologies—then it is deeply pataphorical in nature.

Pataphor and its many variations can be expressed by the following formula:



Here, **A** is one world (or ontology) and **C** is an incompatible world: $\mathbf{A} \neq \mathbf{C}$. Next, f is a metaphorical (or any meta-x) relation, and g is a non-figurative (or just x) relation. Last, **B** is an object that is metaphorically compared to something in world **A**, but which exists in world **C**. The concept is surprisingly general, occurring anywhere from economics and finance to various forms of art.

Not infrequently, some concept I have long found interesting turns out to have a pataphorical structure. Pataphor thus has a dual role, of both explaining *why* certain concepts are profound, and helping us know where to look—either to view old ideas in a new light, or even to synthesize bizarre new concepts.

This paper defines ‘patatime, by framing time travel as a ‘metatime’ relation. The first section shows how ‘patatime arises from the interaction of time and metatime in two well-known time travel paradoxes. The second section interprets Nick Land’s concept of templexity through ‘patatime. The last section identifies a pataphorical structure underlying many classic paradoxes and quasi-paradoxes.

1 Time Paradoxes & 'Pataphysics

"It is fine to live two different moments of time as one: that alone allows one to live authentically a single moment of eternity, indeed all eternity since it has no moments."

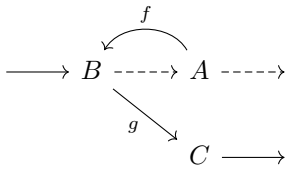
~Alfred Jarry - *Days & Nights*

There are two paradoxes associated with time travel. The *grandfather paradox* makes a change that creates a new timeline and annuls the original. The *bootstrap paradox* makes a change that is in fact continuous with the original timeline. Clearly, one and the same change cannot both annul and be consistent with the original timeline. Since a change must do one or the other, we get two paradoxes.

1.1 The Grandfather Paradox

In the grandfather paradox, someone goes back in time and kills their grandfather before he ever had children; yet, by so doing, the traveller could never have existed, and so could not have killed their grandfather. Killing one's grandfather alters the course of history—the new future is incompatible with the original.

The grandfather paradox has the following 'patatemporal structure:



Here, **A** is the present point in time where the time traveller begins; **B** is the point in the past where they kill their grandfather, annulling the original timeline to **A**; from the new timeline, **C** is the alternate present in which the time traveller was never born, and so could never kill their grandfather. Clearly, **A** belongs to a different ontology than **C** (i.e., $\mathbf{A} \neq \mathbf{C}$), since they belong to separate timelines.

This gives a relation $A \xrightarrow{f} B \xrightarrow{g} C$, where f is a 'metatime' relation (travelling to the past), while g is 'time'. Thus, the grandfather paradox is a pataphor. The paradox holds for any change that rules out the future timeline that led to it.

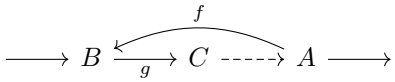
It's paradoxical because the metatime relation must still have a real effect even after the timeline it's based on is annulled. So the grandfather paradox turns on the question of whether metatime can exist without an underlying time.

1.2 The Bootstrap Paradox

'Bootstrap paradox' is from the phrase, 'to pull oneself up by one's bootstraps'. Someone is inspired by some object or information from the past—say, a poem. They travel back in time to see who created it, and it turns out that they write it themselves, from memory. Thus, this object or information has no origin: it is a causal loop. Time is changed, but in a way presupposed by the original timeline.

As self-reifying, the bootstrap paradox resembles *hyperstition*: fiction that makes itself real. Hyperstition is in fact a 'literal' pataphor. In a fictional ontology $\mathbf{A}$, we speak 'figuratively' (f) of an object $\mathbf{B}$, which we speak of non-figuratively (g) within a real ontology $\mathbf{C}$. Written as a pataphor, hyperstition's autopoiesis is 'exogenous', while in the bootstrap paradox it is precisely what's at issue.

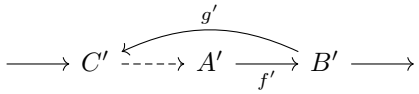
The bootstrap paradox is likewise a form of 'patatime:



Here, $\mathbf{A}$ is the thing that inspires the traveller to go back in time—a metatime relation f—journeying to the point in time $\mathbf{B}$ where the thing was supposedly created. Last, the traveller ends up (re-)creating the thing $\mathbf{C}$ that later inspires them to travel back in time in the first place. (This occurs as a time relation g.) Here $\mathbf{A} \neq \mathbf{C}$, since $\mathbf{A}$ comes from an external source, but the traveller creates $\mathbf{C}$.

Particularly interesting about the bootstrap paradox is how it pushes the boundary of what counts as pataphor. The paradox arises because $\mathbf{A}$ and $\mathbf{C}$ are from incommensurate ontologies, but nonetheless coexist on the 'same' timeline (the dashed line $C \dashrightarrow A$), which would imply that $\mathbf{A} = \mathbf{C}$.

Another part of its paradoxical flavor is our discovery that the traveller's journey to the past is in fact 'only' a time relation (it must have happened beforehand), while the supposedly original timeline is actually a *metatime* relation. So we could alternatively write the bootstrap paradox as follows:



This is a bit harder to understand. The idea is to shift our perspective from the time traveller's point of view to the object's point of view. Here, an object is created at point $\mathbf{A}'$, and must travel to the future, which is actually the past (this ambiguity is what makes f' metatime) in order to ensure that its own creator $\mathbf{B}'$ will travel back in time to create it. The creator's time travel is now only a time relation g', presupposed by the 'original' timeline, where they set the 'past' conditions $\mathbf{C}'$ by which the object will be created. Last, $\mathbf{A}' \neq \mathbf{C}'$ because in $\mathbf{A}'$ the object is unconditioned, whereas $\mathbf{C}'$ involves laying out its own conditions.

Aside from some shifts in rhetoric, the objects in these pataphors are the same: $\mathbf{A} = \mathbf{B}'$, $\mathbf{B} = \mathbf{C}'$, $\mathbf{C} = \mathbf{A}'$. Moreover, pataphor #1 seamlessly links to pataphor #2 through the paradoxical relation $C \dashrightarrow A$. Pataphor #2 likewise links to pataphor #1: after the conditions $\mathbf{C}'$ are set, the relation from $\mathbf{C}'$ to $\mathbf{B}' = \mathbf{A}$ becomes a simple time relation. Another way to put this is, $\mathbf{A}$ is *part* of the conditions $\mathbf{C}'$, simply distanced from the rest in time. What makes $C \dashrightarrow A$ paradoxical is that it's *only* a time relation, rather than a metatime relation.

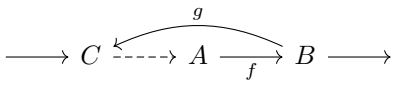
The bootstrap paradox is therefore cyclical: a double pataphor. To frame it as a 'causal loop' ignores the arrows' periodic shift in meaning. Rather, the bootstrap paradox is a Möbius strip between time and metatime.

1.3 Future-Oriented Time Paradoxes

Both of these paradoxes involve going to the past. What about the future?

A beautiful example of 'inverse bootstrap paradox' is the final episode of *Star Trek: TNG*. Simplifying greatly, Picard is contacted by a supreme being Q, who informs him of a temporal anomaly (**A**) that grows larger as it goes backwards in time, and which will keep life from forming on Earth unless Picard can stop it. Picard finds himself warping among three points in time (past, present, future), and in each goes to the anomaly's location (**B**), scanning it to learn more about it. It turns out that scanning the same point in space at three different times is what causes the anomaly (**C**), which doesn't exist yet in the future period.

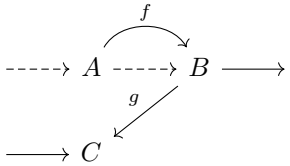
Here, we use our second diagram from before, but our initial interpretation of the objects. Informed from the future about the anomaly (**A**), Picard travels to the future (f) to the place where the anomaly is created (**B**). Scanning the point in space creates a reverse temporal relation (g), where the anomaly (**C**) gets bigger as it goes into the past, thus provoking Q to warn Picard about it.



Because of Q's status as a supreme being, diagram #1 and interpretation #2 of the objects are ruled out, which would frame the anomaly as agent. Still, it would be interesting to see if this alternate inverse bootstrap paradox is possible.

Exercise 1: Come up with a future-oriented bootstrap paradox based on diagram #1 and interpretation #2 of the objects.

For the 'inverse grandfather paradox', two pasts converge into one future timeline, and someone from one past travels to the future, so as to prevent that past timeline from occurring. On the surface, this last part doesn't make sense, reflecting the premise that only future timelines can be altered: entropy only flows forward. But let's write it out and see what happens.



For all arrows except f and g, arrows going into objects in the first diagram are now going out of them, and vice versa. To preserve its structure as pataphor, we must keep $A \xrightarrow{f} B$ (instead of $B \xrightarrow{f} A$), which has the intuitive meaning of travelling from the past to the future. Awkwardly, however, keeping $B \xrightarrow{g} C$ implies a backward time relation g from **B** to **C**.[2]

I'm sure that out of all the time travel stories out there, at least one has a better example of the inverse grandfather paradox. But here's one I made up.

Someone from the present (**A**) is transported (f) to the future, where a group of transdimensional beings explain how any moment in time results from the closure of infinite potentialities — it is an endpoint of all the pasts that could

have led to it. To amuse themselves, the beings take infinite versions of the same person from each possible past, and make them compete for the reward of their timeline having existed. Once someone wins, the beings have in their possession a temporal anomaly that goes backwards in time (g), 'fixing' the winning timeline.

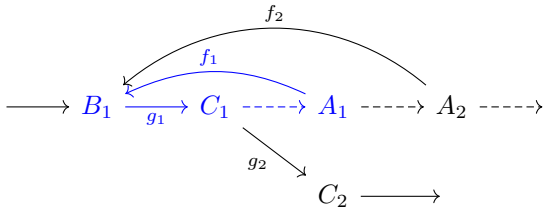
The infinite versions of the protagonist compete in a series of bizarre combinatorial games. (The beings complain they have seen all 10^{120} possible games of chess.) Finally, only two remain: one from timeline **A**, one from **C**. **A** wins. But when activating the temporal anomaly, the protagonist instead saves timeline **C**. The protagonist's destruction (**B**) of their timeline causes a paradox that kills the transdimensional beings. Before dying, the beings reveal this was the reason for their tournament all along, and are surprised their plan worked so soon.

The story is still a tad banal. What would really clinch it is a twist ending that leads to a meta-grandfather paradox. Is this possible? Let's find out.

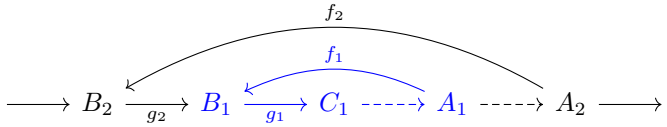
1.4 Time Meta-Paradoxes

In what is erroneously called the 'reverse grandfather paradox', when the traveller was a child they were nearly killed in an accident, but were saved by a mysterious stranger who disappeared afterward; later in life, they go back in time to meet the stranger, but then end up saving their child-self. In fact, this is only a variant of the bootstrap paradox.

Suppose the traveller later goes back to that point in time and kills their past self, so that their child-self is killed in an accident. We thus have a grandfather paradox *of* a bootstrap paradox, leading to a 'double' death of the traveller. We also get a 'meta-grandfather paradox', where the past self being killed means that the future self wouldn't exist to kill him, and the child-self being killed means that the past self wouldn't exist to be killed.



Now imagine: I go back in time to meet the stranger, and am in such a hurry to find my child-self that I almost get hit by a car, but someone pulls me away just in time. I ignore them, rushing to meet the stranger, and then somehow end up saving my child-self. Years later, I wonder who it was who pulled me out of traffic, and go back to that point in time. As I'm looking for that location, I see someone about to get hit by a car, and pull them away just in time, before realizing in shock that the person is my past self, rushing to find my child-self.



We can iterate this meta-bootstrap paradox as many times as we'd like: on my way to meeting stranger n, I'm saved by another stranger $(n+1)$ before saving my past self $(n-1)$, whereupon I realize **I'm** stranger n, ad infinitum.

Likewise, to the end of any n-order meta-bootstrap paradox we can append a grandfather paradox. I need only kill my most recent past self, which will cause a domino effect as each of my past selves is not there to save the previous one, ending with the death of my child-self — an n-order meta-grandfather paradox.

Note that a grandfather paradox is an endpoint of any meta-paradox. That means we can't have a grandfather paradox of a grandfather paradox, nor a bootstrap paradox of a grandfather paradox. As well as making sense intuitively, this follows from our arrow-notation for time paradoxes.

Exercise 2: Come up with a future-oriented meta-bootstrap paradox, and/or a future-oriented grandfather paradox of a bootstrap paradox.

Exercise 3: Come up with a meta-bootstrap paradox based on diagram #2 —either for both levels, or with different diagrams for each level.

1.5 Metaphysics of Time vs. 'Pataphysics of Time

There are three metaphysical 'solutions' put forth expressly to eliminate the above (meta-)paradoxes, each of which rejects a different aspect of pataphor.

The first solution is to claim that the existence of paradox implies time travel is impossible. This amounts to denying the notion of metatime: $\nexists f,$ s.t. $A \xrightarrow{f} B$.

This solution raises the question of what a paradox *is*. Paradoxes are often taken as signifying a problem in our concepts, but this solution assumes paradoxes bear upon reality itself. Quine (1961) identifies three types of paradoxes:

1. **Veridical** – Truths that humans find hard to grasp, e.g. Monty Hall puzzle
2. **Falsidical** – 'Proofs' of a falsehood by means of some fallacy, e.g. Zeno
3. **Antinomy** – Reaching a self-contradiction via proper reasoning, e.g. Russell

This solution presumes that time paradoxes are antinomies. Yet, they could turn out to be falsidical. The grandfather paradox turns on whether metatime without time can still have real effects—in a sense, an empirical question, for which we only lack examples. Our situation may be like that of a philosopher in a static universe, who takes Zeno's paradox as an antinomy because he has never moved.

The second solution is to claim the universe itself prevents such paradoxes. This idea has various fantastical versions, such as 'time guardians', or attributing direct agency to the universe. The Novikov self-consistency principle amounts to the same claim, albeit in more scientific rhetoric: any event that could cause a paradox must have probability 0. These amount to saying $\nexists g,$ s.t. $B \xrightarrow{g} C$.

There's a subtlety here that's easy to miss. The claim obviously doesn't refuse time (g) itself, but rather, denies time *in* time. This solution denies that *independent* time-relations can be created following a metatime relation, and thus rejects the possibility of appending an arrow g after an arrow f. Time travellers can only act within a fixed timestream: no 'true' changes are possible.[3]

The third solution is the 'multiverse hypothesis', inspired by the many-worlds interpretation of quantum mechanics. The idea here is that all possible timelines independently 'exist', so that travelling back in time merely takes a person to a *different* timeline (rather than a previous point of the same timeline), in which they are free to kill their grandfather. Both their original timeline and the new timeline continue to exist, despite any actions by the traveller. Pataphorically, this amounts to denying that any ontologies are incompatible: $\forall A \cdot C, \mathbf{A} = \mathbf{C}$.

In the multiverse hypothesis, then, time as such is a static decision tree. What we know as 'time' is actually *metatime*, as we travel from branch to branch. Thus, if metatime can flow forward, nothing rules it out from flowing backward.

This solution neatly resolves the grandfather paradox, but not the bootstrap paradox. And if one causal loop is allowed in our decision tree, then we lack any way to disprove that all of time is a causal loop—a Nietzschean eternal return.

Our final option is that reality itself is 'pataphysical. If nothing else, I hope to have shown that this does not mean lapsing into unreason, or even unrigorous reason. Rather, paradoxes are themselves pataphors between language and the real.

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Just as pataphor is not a new figure of speech, but rather a new relation of figurative and literal that produces a bizarre effect, we should not think of 'patatime as a new *medium*, but rather as a new relation of time and metatime.

'Patatime is not a solution to paradox, but underscores a dimension (f vs. g) otherwise easy to overlook. Further, each form of metaphysical closure for time paradoxes corresponds to denying a separate property ('pataxiom) of pataphor.

Our arrow-notation lets us remain agnostic as to any definition of metatime. The concept of 'patatime is course useless if 'metatime' only means time travel. To generalize our notion of metatime, we next turn to a new concept: 'templexity'.

2 Templexity

"Duration is the transformation of a succession into a reversion.
In other words: THE BECOMING OF MEMORY"

~Alfred Jarry - "How to Construct a Time Machine"

A common fallacy of continental philosophers is to think that by coining a clever pun or neologism (say, Haraway's 'Cthulhucene'), they have thereby created a concept. I recently thought up 'oneironomics', and amuse myself trying to conjure a meaning that lives up to the word. Such *bon mots* leap out on the page, but seldom fail to disappoint. It's mortifying, in fact, to realize how much of philosophy takes place through puns, as opposed to underlying ideas. These puns are, rather, imaginary solutions—footholds for a trans-ontological leap.

'Templexity' is a beautiful word. The question is whether it's a concept. Some authors reject conceptuality outright, e.g. Derrida. That doesn't seem to be what Nick Land is doing here. In my view, a concept is a model. A well-defined concept should be expressible formally, as with—I'll never tire of this example—rhizomes via graph theory. That's my goal here, via 'patatime.

2.1 Cybernetic Time

Land situates templexity in cybernetic terms, through three main themes: time anomalies, entropy vs. negentropy, and time loops. After outlining these, we will formalize templexity as a variant of 'patatime, then sketch out its implications.

Land says little about time in and of itself, focusing instead on time anomalies. When he does speak of time as such, it is as "the existing order of time" (§1.3), as opposed to "the cosmic disordering of time" (§1.5), "time-disturbance" (§2.4), and so on. Implicitly, then, Land frames time (g) as conservation.

Land's main tool for analyzing time anomalies is *entropy* (increasing disorder) and its opposite, *negentropy* (increasing order). As is well-known, the second law of thermodynamics mandates a statistical increase of entropy in a closed system over time. The arrow of time, as entropic, only flows forward. Yet, being a law, entropy is a form of higher-level 'order' mandating the dissipation of lower-level order. That is, it's possible to frame entropy as a form of metatime (f).[4]

For Land, the difference between entropy ($\xrightarrow{f}$) and negentropy is simply a "local inversion of the arrow of time" (§8.5), i.e. changing the arrow's direction. Negentropy is entropy flowing backwards, from future to past: time travel ($\xleftarrow{f}$).

As a corollary, this definition of f lets us represent de- and reterritorialization as 'patatime. In the deterritorialization step, object **B** has an entropic (f) relation to territory **A**, as it pulls out of **A**'s 'order'. Over time (g), **B** is reterritorialized into (taken as 'belonging' to) incompatible territory **C** ($\neq$ **A**).

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The last element of templexity is time loops, which Land frames through the bootstrap paradox (§9.1). The closest he gets to defining templexity (§8.5):"Self-cultivating – or auto-productive – complexity is time disintegration (templexity)." Furthermore: "Auto-production [is] sustained local entropy reversal" (2014a: 67).

Here is where Land is most hard-pressed to find examples. He points out how Marx's definition of capital as $M \rightarrow C \rightarrow M'$ asymptotically approaches an auto-productive circuit. "There's no political economy without templexity" (§9.4). Land claims mechanization hastens this loop's closure, but fails to explain how.

More promising is Land's recasting of feedback loops as autopoietic (§9.4):

> [F]eedback causality tends to auto-production, and thus to time-anomaly. Any nonlinear dynamic process, in direct proportion to its cybernetic intensity, provides the explanation for its own genesis. It appears, asymptotically, to make itself happen.

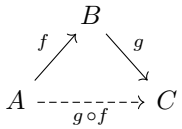
Land's key example is urbanization as negentropic. "The city...cannot be made without time reversal" (2014a: 51). Cities reverse the entropic arrow of time f, in a way isomorphic to time travel. "Cities are time machines in *exactly* the same way they are anomalous distributions. Population concentration...is a key to the disorder of time" (ibid., 48). We don't have a time loop yet, though.

This is where Shanghai comes in. Land's approach via architecture is, put politely, unconvincing (cf. §§6.1–6.14). More cogent is his nod to 'Shanghai capitalism' (§9.5), with its chiaroscuro of conspicuous luxury and abject poverty,

often meters apart.[5] In such an environment, filled with local de- and reterritorializations of Western modernity, the distinction between entropy and negentropy—increasing and decreasing order—becomes blurred, even converges into a loop. Here we have a passage between ontologies we thought were incompatible, attended by wild oscillations between time g (as conservation) and metatime f.

2.2 Formalizing Templexity

We now have a strong enough grasp of templexity to formally define it. Recall how in pataphor, a fundamental 'pataxiom was that $\mathbf{A} \neq \mathbf{C}$: there is no arrow $h = g \circ f$ connecting the two incompatible ontologies. Occasionally, however, this rule is broken. We call this *meta-metaphor*, which has the following structure.

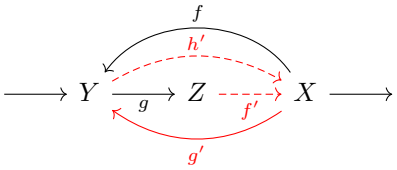


To illustrate, many puns are meta-metaphors or meta-metonyms. In just the right situation, two incompatible meanings suddenly come together, making us laugh.

In short: templexity is the 'patatime analogue of meta-metaphor.

We can see this most vividly in the case of 'Shanghai time'. An aspect ($\mathbf{Y}$) of Chinese traditional culture ($\mathbf{X}$) is negentropically deterritorialized (f). Over time (g), it is accepted (reterritorialized) into modernity ($\mathbf{Z}$). But then modernity itself ($\mathbf{Z}$) is entropically deterritorialized (f') in the direction of traditional culture ($\mathbf{X}$). From here we revert 'back in time' (g') to the old deterritorialization ($\mathbf{Y}$), which is seen as linked (h') to traditional culture.

The pataphor $X \xrightarrow{f} Y \xrightarrow{g} Z$ links to meta-metaphor $Z \overset{f'}{\dashrightarrow} X \xrightarrow{g'} Y \overset{h'}{\dashrightarrow} X$, in a hypercomplex loop. Thus, as meta-metaphor, templexity can act as a loop on its own, or couple with pataphors to create bootstrap-like dynamics.



Going further than the autopoiesis seen in hyperstition, here Land is most interested in *autocatalysis*: a reaction forms a catalyst for a further reaction. In this sense: "The universe is a continuing explosion. So is terrestrial life" (2014a: 46).

Thus, not only has Land shown that 'patatime is operative in the real world, but also that even the universe and life itself can be construed as 'patatemporal.

A final stress-test for our reading of templexity: Land notes that "the Novikov Self-Consistency Principle...preserves hypothetical templexity," i.e. that which is " investigated cosmo-physically under the name...'closed timelike curve' " (2014a: 58). In our notation: once we go back in time (f) to point $\mathbf{B}$, Novikov's principle lets us act (g) in the past $\mathbf{C}$ only in ways presupposed by (h) the present $\mathbf{A}$.

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We have formalized templexity as a variant of 'patatime.[6] Our formula helped to clarify the meaning of templexity, which in turn let us generalize the purview of 'patatime. This 'feedback loop' can surely be deepened. Nick Land comments: "Spiromorphism"—time, cybernetics, and networks as spirals—"envelops everything said here" (2014a: 66-7). By interpreting our 'pataformalism through Land's definition of metatime as entropy, it should be possible to repurpose the time meta-paradoxes sketched above into a ('pata-)theory of spirodynamics.

3 'Patadoxes

Dear Aletheia, Epoché writes. *Tell me: are spirals also questions?*
~Amy Catanzano - "Earth, Redux, Majesty"

We began by identifying two paradoxes as 'patatime, and generalizing the content of these paradoxes let us broaden our concept of 'patatime. Now, let's go in the other direction: using pataphor to find a more general notion of paradox.

In a sense, it's 'obvious' that paradoxes are pataphorical, since by definition they involve an incompatibility between truth and our expectations.

Recalling Quine's (1961) typology, a veridical paradox involves a state of affairs **B** that holds in a special context **C**, but is entirely at odds with our common-sense context **A** ($\neq$ **C**). Here, f is a metaphorical relation—we're *comparing* it to our own experience—while g is simply a literal relation. An example is the Banach-Tarski paradox, where a ball can be decomposed into a finite number of pieces and then re-assembled into two identical copies of the same ball. This phenomenon (**B**) is true in mathematical space (**C**), which turns out to be very different from the kind of space we know (**A**). The theorem proves $B \xrightarrow{g} C$; metaphorically comparing **B** to normal space ($A \xrightarrow{f} B$) creates a pataphor.

Likewise, a falsidical paradox involves a plausible line of reasoning **B** whose implied facts **C** go against a true fact **A**. Like before, the (fallacious) reasoning 'proves' that $B \xrightarrow{g} C$; only this time, this reasoning **B** has a relation of *metonymy* to true facts **A**, as we substitute (f) these reasons in **A** and find no immediate conflict. This substitution ($A \xrightarrow{f} B$) creates *patonymy*, a variant of pataphor.

The major challenge is to show that antinomies are pataphorical.

Let's start with the Liar paradox: "This sentence is false." On the one side, we have this sentence *qua* statement (**A**) capable of declaring a truth-value (**B**), in a meta-level relation (f). On the other hand, we have this sentence just on its own (**C**), which *has* a truth-value (**B**), but only on the object-level (g). The paradox arises because the two sides are incompatible: **A** $\neq$ **C**.

The next most famous antinomy is Russell's paradox: Consider the set of all sets that are not members of themselves; is this set a member of itself? We can write it formally as: $R = \{x \,|\, x \notin x\} \rightarrow R \in R \Leftrightarrow R \notin R$. Here, we have a set *qua* set (**A**) on the one side, and a set *qua* member (**C**) on the other. Here, **B** is the *role* of membership ($\in$). The set R is free in principle to be a member of other sets, so to say it is a member is merely an object-level statement (g).

Conversely, **A** is in a higher-order, 'meta' relation (f) to its elements **B**. Again, the paradox arises due to the incompatibility of both sides ($\mathbf{A} \neq \mathbf{C}$).

Thus, antinomies are pataphors between meta-level and object-level.

These examples tell us nothing new. What would make pataphor *useful* is a way to represent compound paradoxes, such as Smullyan's metaparadox: "Either this sentence is false, or (this sentence is paradoxical if and only if it isn't)." This may even let us design a 'pataparadox. This, for now, remains an open problem.

I'd like to suggest that many puzzles considered paradoxical by most people, but not true paradoxes by philosophers, owe this to their pataphorical structure.

An example is the hypergame paradox (Zwicker, 1987). In hypergame, player 1 chooses any game at all for player 2 to play. The problem is that players can keep choosing hypergame so that the game never terminates. The counterintuitive aspect is that any formal definition of games would have to include hypergame.

I'd love this to be a paradox, but it isn't. What it is is a 'patagame (almost).

In our first turn **B**, we begin with hypergame **A** as a metagame (f), but can in fact treat it (g) purely as a game **C**. If we allow a relation $C \xrightarrow{h} A$ to denote going to our next turn, this makes hypergame a meta-metagame, and creates the possibility for an infinite loop. Were it not for this h, it might be a true paradox.

It may be that pataphor is a more fundamental property of paradox than even typical criteria such as self-reference. If so, we might define a class of 'patadoxes, of which paradoxes are the 'respectable' subset. Alternatively, our 'pataformula can guide us in finding the h that separates a quasi-paradox from a true paradox.

Typical accounts of paradox fail to distinguish f and g. While this makes little difference for antinomies, pataphor may help in inventing new paradoxes. Further, the role of metaphor and metonymy in veridical and falsidical paradoxes gives a decidedly continental flavor to a topic long-monopolized by analytics.

If paradoxes are pataphors between language and the real, 'pataphysics helps us to see whether what is at stake is representation (metaphor), substitution (metonymy), or a break between orders of thought.

Conclusion

> *"The pataphysical universe is a supplementary one, in which time—*
> *warped, stopped, stretched, superimposed, reversed, disjointed—*
> *undergoes the effects and the rigors of (its) textualization."*
>
> ~Stillman (1982: 75)

All too seldom, in a flash, one has a good idea. More often than not, this is followed by a second flash: our idea was, in fact, only the idea of an idea. We typically view formal approaches as a trade-off: less of the former, to avoid the latter. But really, a formula with a good idea behind it can help to generate myriad ideas of ideas—empty but evocative variables that only await an example.

Lewis (1976: 145) defines time travel—for us, metatime—as "a discrepancy between time and time." 'Patatime is a discrepancy between time and metatime. The two major time paradoxes are pataphors, thus formalizable, allowing both

future-oriented inversions and recursive meta-paradoxes. Each form of metaphysical closure of these paradoxes corresponds to denying an axiom of pataphor.

Templexity is a variant of 'patatime that redefines metatime as (neg)entropy, plus adds a relation between incompatible ontologies, allowing for loops either on its own or coupled with a pataphor to produce bootstrap-like spirodynamics.

Quine's (1961) three forms of paradox are structured pataphorically, as are quasi-paradoxes. As well as offering a new vocabulary, pataphor may prove helpful for formalizing more difficult paradoxes, as was the case for time paradoxes.

When we see a meta-, a 'pata- is often not far behind. I hope this paper helps to affirm 'pataphysics as a unique and conceptually rigorous methodology, as distinct from metaphysics as metaphysics is from physics.

References

1. Jarry, A.; Taylor, S. (trans.). (1996 [1911]). *Exploits & Opinions of Dr. Faustroll, Pataphysician*. Boston, MA: Exact Change.
2. Jarry, A.; Shattuck, R. (trans.). (1893). "How to Construct a Time Machine." Retrieved from `http://michaelhalm.tripod.com/id92.htm`
3. Joncas, G. (2017). "Pataphor in Mechanism Design." Retrieved from `linguisticcapital.wordpress.com/2017/06/01/pataphor-in-mechanism-design`
4. Land, N. (2014a). *Templexity: Disordered Loops through Shanghai Time*. Shanghai: Urbanatomy Electronic.
5. Land, N. (2014b). "Teleoplexy: Notes on Acceleration," in Mackay, R. & Avanessian, A. (Eds.) (2014). *#Accelerate: The Accelerationist Reader*. Falmouth, UK: Urbanomic, pp. 509-20
6. Lewis, D. (1976). "The Paradoxes of Time Travel." *American Philosophical Quarterly* 13(2), pp. 145-52
7. Stillman, L. (1982). "Modern Narrative Techniques: Jarry, the Pre-Text." *SubStance* 11(3), pp. 72-81
8. Quine, W. (1961). "The Ways of Paradox," in Quine, W. (1966). *The Ways of Paradox and Other Essays*. New York: Random House, pp. 3-20
9. Zwicker, W. (1987). "Playing Games with Games: The Hypergame Paradox." *American Mathematical Monthly* 94(6), pp. 507-14

Notes

[1]In short, I believe it is possible to cast all of 'pataphysics in terms of pataphor. Consider Jarry's definition (1911: 22): "Pataphysics is the science of imaginary solutions, which symbolically attributes the properties [**B**] of objects [**C**], described by their virtuality [f], to their lineaments [g]." For a more basic introduction, see my working paper (Joncas, 2017), which defines pataphor, patonymy, and n-order pataphor.

[2]To prevent confusion, I mean 'reversing arrows' here in the sense of altering $B \xrightarrow{g} C$ into $C \xrightarrow{g} B$ and so on. This includes how, in changing from past to future, arrows that went out of **A** are now going into **A**. Where the arrows actually point on the diagram (left for past, right for future) is just for ease of understanding, and isn't a true reversal.

[3]This solution would help solve what is called a third time paradox, the Fermi paradox. The idea is, if time travel is possible, where are all the time travellers? The answer, in light of Novikov's principle, is that they are only able to passively watch, since any apprehension of travellers by people in the past would influence the timeline.

[4]This is complicated by Land's provisional mapping between entropy/negentropy and time/temporalization, which I think is reconcilable with entropy as f (2014a: 64):

> [W]ith at least provisional plausibility, the transcendental or (fundamental) ontological difference between time and temporalization can be securely aligned with the distinction between entropic and negentropic directionality, or the normal (cosmic) and inverse (evolutionary) arrow of time...

[5]To avoid accusations of falling prey to orientalist fantasy: at the time of writing, it is the present author's second (non-consecutive) year living in Shanghai.

[6]Nick Land's ostensibly related concept of 'teleoplexy' shows no trace of templexity's pataphorical structure. I'm thus inclined to view it as an entirely separate concept, beyond some convergences in rhetoric. We can see in the following excerpt that teleoplexy largely reduces to Deleuzian hand-waving toward 'the intensive' (2014b: 514).

> [T]eleoplexy. At once a deutero-teleology, repurposing purpose on purpose; an inverted teleology; and a self-reflexively complicated teleology; teleoplexy is also an emergent teleology (indistinguishable from natural-scientific 'teleonomy'); and a simulation of teleology—dissolving even super-teleological processes into fall-out from the topology of time. 'Like a speed or a temperature' any teleoplexy is an intensive magnitude, or non-uniform quantity, heterogenized by catastrophes. It is indistinguishable from intelligence.