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Vom 3. Mai 2011 bis 7. Mai 2011 fand in Stockholm, Schweden die internationale Konferenz »Towards a Science of Consciousness« statt. Der Untertitel der Tagung lautete: »Mind, Brain, Reality«. Im Rahmen dieser drei Begriffe bot die Tagung Raum für einen interdisziplinären Dialog von Philosophen, Neurowissenschaftlern, Biologen, Chemikern, Physikern sowie Vertretern der Geisteswissenschaft. Das Klima der Tagung war insgesamt sehr konzentriert, gab jedoch trotzdem nötigen Freiraum, den die Entfaltung von wissenschaftlichen Dialogen benötigt. Im Rückblick kann gesagt werden, dass das Konzept der Veranstalter als erfüllt gelten kann.

Für mich als Philosophen war es insbesondere interessant den Dialog mit den Vertretern der Spezialwissenschaften zu intensivieren. Im Folgenden möchte die einige wichtige Plenary-Sessions und Concurrent-Sessions umreißen. Das Programm einer Konferenz abzubilden, die insgesamt etwa 150 Vorträge lang war, ist im Rahmen eines Berichts ohnehin schwer möglich.

Paavo Pylkkanen

Thomas Nagel has summarized the philosophical situation with the problem of consciousness as follows: Neither dualism nor materialism seems likely to be true, but it is not clear what the alternatives are. One 20th century thinker who was trying to develop an alternative was the physicist-philosopher David Bohm (1917-1992). The starting point of Bohm's view was the realization that quantum theory and relativity require radical changes in our traditional notions of matter. Such changes then imply new possibilities for understanding the place of mind and consciousness in nature. Bohm showed already in 1952 that quantum theory can be understood by assuming that a new type of 'quantum potential energy' plays an organizing role at the quantum level. In later work with Basil Hiley in the 1980s he argued that this energy is best understood as a type of 'active information'. Information is something that is obviously related to mind and consciousness. By finding a role for information in the fundamental laws of physics Bohm opened up, at least in principle, a new possibility for understanding how 'minds' as informational, meaning-carrying processes - could possibly influence 'matter'. Another of Bohm's quantum-inspired concepts that seems useful in consciousness studies is 'implicate order'. Quantum phenomena such as discontinuity, wave-particle duality and non-locality suggest the need to give up the familiar Cartesian continuous 3D 'explicate order' as fundamental, and instead to assume that the fundamental order of the universe is the order that prevails in the movement of quantum fields, and that this order is 'implicate' in the sense that information about the

whole universe is enfolded in each part of the movement. The familiar explicate order of things in 3D space then unfolds from this enfolded order. It seems that conscious experience has many features that might be better understood in terms of the implicate order, such as spatio-temporal structure, unity and dynamic flow. The Bohmian programme is ambitious and exotic, and also difficult to understand. It is thus perhaps not surprising that more sober consciousness researchers have by and large ignored the radical possibilities it opens up. In this talk I will briefly present the key ideas of the programme, bring out their advantages and problems, and make suggestions about how we might make progress along the road that it points to. The key problem in contemporary consciousness studies is how information becomes conscious. Can the Bohmian programme, with its new, scientifically grounded conceptual resources such as active information and implicate order, throw any new light upon this difficult problem? See also Pylykkanen, P. (2007) *Mind, Matter and the Implicate Order*. Heidelberg and New York: Springer Frontiers Collection

Roger Penrose

A profound puzzle of quantum mechanics is that the discontinuous and probabilistic procedure adopted for measurement is in blatant contradiction with the continuous and deterministic unitary evolution of the Schrödinger equation. An inanimate measuring device, being made from quantum particles, ought to follow the unitary laws, so many physicists take the view that consciousness is ultimately needed for measurement. I here express the almost opposite view that the unitary law must be violated for massive enough systems, and that it is consciousness itself that depends upon this violation, requiring new physics and exotic biological structures for its manifestation. The issue of what kind of universe history could provide laws fine-tuned enough for consciousness to arise will also be raised.

Peter Fenwick

There is a growing awareness of the importance of end of life experiences. These comprise transcendental and spiritual features which support the dying through the last days of life, and paranormal phenomena around the time of death which are comforting for the bereaved. Our data base consists of retrospective and prospective studies of a population of carers in hospices and a nursing home in the UK, and a retrospective study of carers in Holland. Added to this are over 1500 accounts from a largely English sample of the general public in response to media discussions. The dying process as described by these

people will be discussed. The dying process may start one to two years before death with a premonition about one's own death. In the weeks before death there may be 'visits' by apparitions of dead relatives who indicate that they will soon return to accompany the dying person on their journey through death. As the process continues, some indication may be given by these visitors of the likely time they will return. Next, some people report that they transit between this reality and another reality consisting of love, light and compassion. At the time of death, light surrounding the body and shapes leaving the body are reported. Deathbed coincidences occur, when some kind of contact is made between the dying person and someone at a distance to whom they are emotionally close. This 'connectedness' seems to extend both to animals, which become distressed, and even to mechanisms such as clocks which are often reported to stop at the time of death. One hypothesis is that the process of death seems to be related to the stages of loosening of consciousness.

Alexander Buck und Ludwig Jaskolla

¹Ladies and Gentleman, first of all we would like to thank the organizers here in Stockholm as well as the Center for Consciousness Studies in Tucson for putting together such an inspiring conference. Our topic for today is:

Panexperientialism and the Self

Following Thomas Nagel and Philip Goff², we argue that if some state is experiential then it feels for someone in a certain, distinctive way to be in that very state. This is why we need to start our analysis with a stipulative definition:

[Panexperientialism]: Every ontology that takes some kind of experiential content to be a fundamental aspect of every material state of reality is referred to as panexperientialistic.

We will give some hints on the inter-relation of panexperiential ontologies of the natural world and our everyday ontology of the self. These considerations shall motivate a detailed account of the self within panexperiential holism – the theory of stable patterns. Last but

¹Anbei findet sich der Vortrag von Alexander Buck und mir, der freundlicherweise durch Pro Philosophia unterstützt wurde und im Rahmen der Konferenz erheblich verbessert werden konnte. Wir danken besonders Uziel Awret und Zoltan Veres.

²(cf. Goff 2008, 129)

not least, we will take a close look at the question whether our theory of stable patterns can account for the classic requirements of viable theories of the self.

First some words concerning the inter-relation of panexperientialism and the self. It has been notoriously difficult for panexperientialists to account for our everyday notion of the self. Spinoza's philosophy of the self might easily serve as a prominent example for this assertion: Spinoza assumed that human selves are merely accidental modi³ of one universal and absolute substance. Neither are these modi in any way independent of this substance nor are they persisting through time without further help. Both features of "selves-as-modi" conflict with our every notion of the self. Galen Strawson has analyzed this notion in great detail in his *Selves*⁴. The concept of the self that seems to be grounded in our everyday experience entails the following requirements: (a) On the one hand, selves are said to be relatively ontologically independent from their respective material basis. (b) On the other hand, they are not part of greater ontological unities. Consequently, selves have been characterized as unified, independent singularities. (c) In addition, selves are often understood as enduring entities. Some philosophers even claim that they are the paradigmatic case of something that can be wholly present – i.e. numerically identical – at different times. Given these requirements, we may ask: why do they conflict with panexperiential theories of the mind?

We discuss two version of panexperientialism in order to substantiate our previous point. Firstly, we will talk about the Coleman-Goff-version of panexperientialism. Secondly, we will talk about our own thesis of panexperiential holism.

1: Although Sam Coleman and Philip Goff develop their respective panexperientialism from quite different starting points, they share one conceptual presupposition that is important for our present question. Both argue for a micro-level panpsychism – that is a version of panexperientialism where the micro-particles of physics bear experiential characteristics and are fundamental compared to macro-level entities. And both argue that the principle of unrestricted mereological composition⁵ holds true for micro-level entities. That means that for any set of micro-entities, these micro-entities compose a macro-entity. Against this background, the following conceptual argument can be formulated:

1. Unrestricted mereological composition for Coleman-Goff-panexperientialism is certainly true. If this the case, then for every two sets of micro-entities composing two

³(cf. Spinoza *Ethica*, De Origine et Natura Mentis)

⁴(cf. Strawson 2009, Part Three)

⁵(cf. Sider 2001, 120ff.)

“normal” macro-entities, these two sets compose a third macro-individual. Thus, Romeo and Juliet together compose “Romiet”.

2. But if Romeo and Juliet compose Romiet, then certainly neither Romeo nor Juliet are independent individuals because both can be said to be proper parts of Romiet.
3. And if this is the case, then obviously Romeo and Juliet do not satisfy the condition (b) that has been set up for our ordinary concept of the self. Thus, no macro-entity can be said to be a self in the classical sense discussed above.

Let us take stock for a second: We think that our argument shows clearly why Coleman-Goff-panexperientialists have hard time giving a reasonable account of ordinary selves.

2: Now, we are going to discuss the same question for panexperiential holism. Here is a short sketch of the central conceptual hallmarks of this ontology of the mind:

»[Panexperiential Holism] Panexperiential holism is the thesis that there is exactly one entity - the *Universe* itself. This entity is can be adequately described as being essentially (i) an objective matter of fact, (ii) objectively structured, i.e. not completely homogeneous, (iii) a subject of experience and (iv) exemplifying experiential content.«⁶

Characteristics (iii) and (iv) tell us that the universe is ‘panexperiential’ in the sense that was defined at the very start of this talk. The fact that there is exactly one entity suffices to classify our approach as some kind of holism – by the way: this holism resembles very much the Spinoza’s holistic ontology discussed above. Characteristics (i) and (ii) discern this holism from any kind of subjective holism. Where classic panexperiential ontologies start with micro-entities that have both physical as well as experiential features to build up the universe from its most fundamental constituents, panexperiential holism takes the whole universe as its starting point: It tells us that this universe is a big experiential subject that can be dissected into various experiential parts. Surely, there is a similar problem to the one discussed in the last section:

1. Certainly, macro-entities depend ontologically upon the universe within the conceptual framework of panexperiential holism. If this is the case, then diachronic persistence conditions as well as synchronic dissection principles are not independent.

⁶(Jaskolla and Buck 2011, forthcoming)

2. If this is the case, then panexperiential holism contradicts all the requirements of our ordinary ontology of the self. In particular, the conditions: (a), (b) and (c). Thus, no macro-entity can be said to be a self in the classical sense discussed above.

Again, we have shown that panexperiential holism seems to be inconsistent with our ordinary ontology of the self. In the following paragraphs, we will focus our considerations to the question how panexperiential holists can cope with this situation.

Selves as Stable Patterns

Despite this demanding background, let us now take a closer look at the concept of the self proposed by panexperiential holists. The central philosophical intuition purported by panexperiential holists is that ordinary selves – like human persons – are stable patterns within the one universal and objectively structured universe.

The first question that arises immediately is, how can this philosophical intuition be modeled in metaphysical theory. We argue that the theory of abstraction can help to substantiate the aforementioned intuition. Stemming originally from the work of Gottlob Frege, abstraction theory has been nowadays defended by Bob Hale and Crispin Wright⁷. They argue that we are able to pick out and define abstract entities by providing certain equivalence-relations. We will first sketch the original theory before applying it to the problem of the self. Take for example Hume's famous definition:

The quantum of elements A = The quantum of elements in B, iff.
there is a $f:A \rightarrow B$ such that for all $a \in A$ there exists some $b \in B$ with $f(a)=b$, and
vice versa.

In this special case, the equivalence relation in question is defined by the bijective function f which assigns to every element of the first set exactly one element of the second set – and again vice versa. Basically, the equivalence relation holding between every two elements of our preceding sets, picks out a certain characteristic feature. This feature tells us that both sets have the same amount of elements. The preceding humean example has two features which are interesting for our topic.

(1) On the one hand, it is interesting that abstraction theory can be read explicitly as an anti-realistic approach to abstract entities. It allows for ordinary talk about universals – like having the same amount of members, but it takes these entities to depend systematically

⁷(cf. Hale and Wright 2009, 178-212)

as well as ontologically upon the underlying equivalence relations. Why is the case? Well, a first clue consists in the fact that abstraction theory is asymmetric in the sense that it implies a conditional claim. If and only if, a certain equivalence relation holds true, then our ordinary talk about abstract entities is reasonably justified. Nevertheless, these conditionals are not full definitions of the abstract objects in question. Gideon Rosen has put this beautifully:

»Moreover, these equations (or abstraction principles, as they are sometimes called) appear to have a special semantic status. While they are not strictly speaking definitions of the functional expression that occurs on the left, they would appear to hold in virtue of the meaning of that expression.«⁸

But if this asymmetry holds true, then the following ontological interpretation of abstraction theory seems reasonable. Equivalence relations can be interpreted as concrete, fully non-abstract relations holding between concrete particulars (or for our matter: concrete patterns) of the world. Our ordinary reference about abstract entities is nothing more than a way of talking grounded in these wholly concrete relations.

(2) But some might argue against this claim the following way: Look close at your wholly concrete relations. In order to discern whether two objects fall under a certain abstract object, both need to satisfy the same equivalence relation – and here “the same” is to mean “identical”. If this is the case, says the proponent of realistic abstract objects, then you need realistic abstract objects of second order to discern all the different equivalence relations. Bottomline: the critic argues that abstraction theory involves a vicious circle. But here is where a second feature comes into play. It can be shown that the equivalence relations employed by abstraction theory are consistent not only with the interpretation just mentioned the critic, but also with a much more modest account of equivalence relations. Following Peter Simons, we argue that for a certain relation to be an equivalence relation in the sense defined above, it suffices that the different relations holding between concrete particulars are merely similar. Now in contrast to classical numerical identity, the equivalence-as-similarity is not transitive. This entails that for any three concrete relations R1, R2 and R3, these relations need to be similar only by pairs. Implying that R1 is similar to R2 and R2 is similar to R3 but not R1 to R3. But if this is case, says the proponent of abstraction theory, then the aforementioned argument fails, because the different concrete relations ground the equivalence do not fall under exactly one abstract concept. Thus, the

⁸(Rosen 2001)

threat of second-order-abstract-entities is circumvented.

Keeping these considerations in mind, we can now turn to the discussion of selves and their diachronic persistence conditions within the ontological framework of panexperiential holism. Peter Simons has discussed this problem in great detail in his paper on *The Thread of Persistence* and we will rely heavily on it during the following paragraphs⁹. We follow Simons in assuming that continuants – in our case selves – can be understood as abstraction from a material basis within some 4-dimensional space-time-manifold. Against our holistic background, this implies that we need to find the relevant equivalence relations that will pick out certain objective patterns of the universe in just the way our ordinary speech refers to selves as continuants. Simons tells us that such an equivalence relation needs to satisfy two requirements:

- »Firstly, it has to have the requisite formal properties of an equivalence relation.
- ... A second feature that the required equivalences seem to share is a strong causal component. ... [i.e.] causal continuity alongside a certain stability.«¹⁰

We argue that the relation of *phenomenal genidentity between patterns at times* fulfills these characteristics. A substantiation of this assumption will be given in the following considerations. Consider some portion of the panexperiential holist's universe which exemplifies the following objective patterns $P(a)$, $P(b)$ and $P(c)$ at t_1 as well as $P(a^*)$, $P(b^*)$ and $P(c^*)$ at t_2 . Based solely on the original patterns and taking into account, we face the following set of relations: $R:P(a),P(a^*)$; $R:P(b),P(b^*)$; $R:P(c),P(c^*)$; $R:P(a),P(b^*)$; and so on. Obviously, this set of relations is not able to model the ordinary features of selves adequately. In particular, only the following relations should be picked out by phenomenal genidentity: $PGI:<P(a),P(a^*)>$; $PGI:<P(b),P(b^*)>$; $PGI:<P(c),P(c^*)>$.

Keeping this requirement in mind, we can turn to an analysis of phenomenal genidentity in terms of content: PGI picks out certain patterns of the universe according to their respective phenomenal status – that is for human patterns, the qualitative content of experience associated with consciousness. We defend the assertion that phenomenal experience does indeed ground a temporal equivalence relation in terms of genidentity. In order to substantiate why this is the case, let us take look at the temporally linear patterns of the universe – for example my perception of the world right now, and a few seconds ago. Surely, these two experiences resemble each other in a certain characteristic way. And this resemblance of content is symmetrical. Further, if we take another experience – my perception of the

⁹(cf. Simons 2008, 5. The Invariance Theory of Continuants)

¹⁰(Simons 2008, 176-177). Additions in [...] were made by the authors.

world a bit later than the first two, we can argue that also experiences need to resemble each other in pairs, it is not the case that resemblance of experiences is transitive. Last but not least, the resemblance of experiences needs to be continuous. If this analysis holds true, then we can assume following Kurt Lewin, these are the formal characteristics of a genidentity-relation. This is why we can give the following definition of the self.

$$\text{Self}(P(a),t_1) = \text{Self}(P(a^*),t_2) \text{ iff. PGI:}\langle P(a),P(a^*)\rangle$$

In fact, the preceding definition is a version of Peter Simons' definition of continuants within an overall 4-dimensional framework of persistence with two essential alterations. First of all, this definition of the self within panexperiential holism does not assume that there are any independent states of the world that need to be related causally. Thus, Simons' second requirement – i.e. the sufficient causal relatedness of the different states – is not a problem within panexperiential holism. Second, Simons refrains from providing an ontological grounding of his genidentity relations. He just argues that such relations can be found.

To sum this up in a very brief way: Within panexperiential holism, ordinary selves are merely the stable succession of objective patterns of experiential content. Ordinary talk about selves being unified and persisting, should be understood as abbreviated speech about phenomenal genidentity relation.

Parfit and Panexperiential Holism

In order to come full circle, we need to explore the viability of this notion of the self within the philosophical discussion. Although most of this talk has been addressed to setting up the panexperientialist's notion of the self, at least a few words concerning this topic are necessary. Let us take a look at the criteria proposed by Derek Parfit: It is Parfit's conviction that the puzzle of the self cannot be solved within the scope of empirical science. Rather, any viable theory of the self needs to take leave from the analysis of ordinary experience. In his *Persons and Reasons*, he argued that such a theory will need to answer three basic questions:

»(1) What is the nature of a person [=self]? (2) What makes a person at two different times ... the same person? (3) What is in fact involved in the continued existence ... over time?«¹¹

¹¹(Parfit 1984, 202)
Additions in [...] were made by the authors.

Certainly, the concept of the self defended by the panexperiential holist is ground in immediate experience, because it relies on the concept of experiential content. But what about the preceding question. Obviously, panexperiential holists will argue that the nature of the self are objective patterns within an holistic universe. A little more complicated are questions (2) and (3). Panexperiential holists will argue that two selves at different times can be said to be the same if they are related by phenomenal genidentity. Involved in the continued existence of selves is in a strict sense the whole universe, because ultimately all the objective patterns depend on it ontologically. In a loose sense, the variation of the physical structure as well as the experiential content of the respective patterns can be said to involved in the continued existence of the self. Interestingly, this fact fits nicely with Parfit's own theory – he argues that the continued existence of persons involves physical as well as psychical continuity. At the end of the day, we take these considerations to show that the concept of the self as stable patterns satisfies the criteria set up by Parfit.

Conclusive Thoughts

Let us take another few moments to evaluate our discussion at least in general. We have shown that in contrast to first impression, the panexperiential holist can develop an interesting and substantial theory of the self that relates our ordinary ontology of the self to the his own theory of the mind. But obviously, this new theory of the self cannot satisfy the requirements set up in the first part of our talk in a strict sense. Nevertheless, given more time, we would ask: Is this really necessary? Are selves essentially to be understood as endurants? We do not think that this is the case. In fact, we would argue that selves-as-stable-patterns are consistent with the central intuition of our ordinary ontology of the self, but not if these central intuitions are interpreted in an endurantistic fashion. But these are questions for another day ... Thank you very much for your attention!

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