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Dignity, Free Will, Emergence, and Illusion

Bartłomiej Andrzej Lenart

Abstract: This paper argues that although emergentism does not appear to provide the libertarian with the tools she requires for metaphysical freedom, this does not actually matter for the grounding of a robust notion of moral responsibility. Moreover, illusionism about metaphysical freedom offers some consolation to those who see metaphysical freedom as a source of human dignity and value. This paper argues that emergentism, even in its weak form, when buttressed by both philosophical and psychological considerations regarding the illusory nature of the phenomenal experience of metaphysical freedom, as well as the Strawsonian notion of reactive attitudes, serves as a source not only of value and dignity, but also of a robustly grounded conception of moral responsibility.

Keywords: emergence; illusionism; free will; libertarianism; determinism; metaphysical freedom; moral responsibility; dignity; human value.

1. Introduction

While philosophers will certainly not cease their ontological explorations and musings, various forms of materialism (I will refer to the set of these different formulations generally and broadly as *physicalism*) have taken root both in the physical sciences and in the standard approaches to many metaphysical problems. Physicalist worldviews can exude poetic imagery about our materialistic origins, as evidenced by the following quote:

Life begins with the process of star formation. We are made of stardust. Every atom of every element in your body, except for hydrogen, has been manufactured inside stars, scattered across the Universe in great stellar explosions, and recycled to become part of you. (Gribbin, J., Gribbin, M., 2001, p. ix)

Physicalism's tendency towards mechanistic worldviews, however, also raises questions regarding our agency, dignity, and metaphysical freedom, as Drew McDermott's ominous question suggests:

As far as science is concerned, people are just a strange kind of animal that arrived fairly late on the scene. When you look at the details of how they work, you discover that, like other life forms, people's bodies are little chemical machines. Enzymes slide over DNA molecules, proteins are produced, various chemical reactions are catalyzed. Molecules on the surfaces of membranes react to substances they come into contact with by fitting to them and changing shape, which causes chemical signals to alter the usual flow of events, so that the machine's behavior can change as circumstances change. Traditionally there was one big gap in this

picture: the human mind. The mind was supposed to be a non-physical entity, exempt from the laws that govern the stars, the earth, and the molecules that compose us. What if this gap closes? What if it turns out that we're machines all the way through? (McDermott, D. V., 2001, p. 1)

There is more at stake than just the prospect of existential angst if such descriptions of our natures are accurate. Physicalism, though appealing and perhaps even beautiful in some ways, does not appear to be compatible with free will (by 'free will,' I mean something closer to a libertarian conception of freedom than a mere compatibilist approach; I will follow Peter van Inwagen (1998) in referring to this notion of freedom as 'metaphysical freedom'). As I will argue, if we assume physicalism, then neither a deterministic physical universe nor an indeterministic one is truly conducive to metaphysical freedom without the postulation of some radical causal mechanism. See Lenart (2022) for an argument outlining metaphysical compatibilism, which proposes a compatibilist position that is logically compatible with van Inwagen's notion of metaphysical freedom.

Why should we even care about metaphysical freedom? There are many answers to this question, but one which resonates equally with most philosophers and lay people is the one provided by Robert Nozick (1981), in his *Philosophical explanations*, where he states that "[d]eterminism seems to undercut human dignity, it seems to undermine our value" (Nozick 1981, 291). Aside from the concern with our dignity and value, there are also worries with our notion of moral responsibility and accountability. Thomas Nagel writes:

If one cannot be responsible for consequences of one's acts due to factors beyond one's control, or for antecedents of one's acts that are properties of temperament not subject to one's will, or for the circumstances that pose one's moral choices, then how can one be responsible even for the stripped-down acts of the will itself, if *they* are the product of antecedent circumstances outside of the will's control. (Nagel, 1976/1979, p. 35)

Physicalism, however, is not limited to the reductive mechanistic dogma suggested by McDermott (2001). Emergentism, which, in its classical form, is a physicalist view, provides a *prima facie* reason to lay our worries about dignity, value, and moral responsibility to rest in virtue of the fact that strong emergentist theories appeal to downward causation as a source of the autonomy of macro-level phenomena (like minds). As this paper will

discuss, however, the concept of downward causation is riddled with serious problems.

This paper argues that although emergentism does not appear to provide the libertarian with the tools she requires for metaphysical freedom, this does not actually matter for the grounding of a robust notion of moral responsibility. Moreover, illusionism about metaphysical freedom offers some consolation to those who see metaphysical freedom as a source of human dignity and value. This paper further argues that emergentism, even in its weak form, when buttressed by both philosophical and psychological considerations regarding the illusory nature of the phenomenal experience of metaphysical freedom, as well as the Strawsonian notion of reactive attitudes, serves as a source not only of human value and dignity, but also of a robustly grounded conception of moral responsibility.

2. The Problem of Metaphysical Freedom

Owen Flanagan explains that “[o]ne reason...that the belief in a nonphysical mind took hold is because thinking of the mind as nonphysical fits well with thinking of human agents as free. Physical things obey natural laws, non-physical things don’t” (Flanagan, 2002, p. 102). However, if Gribbin & Gribbin (2001) are correct in endorsing physicalism on the grounds that human beings are made of the heavy elements produced in stars, then the notion of a non-physical mind becomes quite problematic (this is in addition to the problems Cartesian dualism faces). If “[s]tardust is the key to the existence of complex molecules in the Universe, and therefore to the existence of life itself” (Gribbin & Gribbin, 2001, p. 181), then we are purely physical beings and, although we are very complex physical systems, we too must be governed (just as the stars, the earth, and the molecules that compose us are governed) by the natural laws, which determine the motions of other simpler (and, in fact, all) physical systems.

Flanagan, like all his fellow compatibilists, attempts to reconcile physical determinism with freedom of the will. He writes:

[T]he basic idea is this: accept that deliberation and will exist and that they are often proximate causes of behavior. Concede, however, that they themselves are natural phenomena, indeed that they are brain processes—subject to whatever causal laws govern proximate brain causation. So deliberation and volition exist. (Flanagan, 2002, p. 114)

What Flanagan is hinting at, however, is not metaphysical freedom, but rather *self-control* defined in the following manner: “[f]or some integrated system S , some *subsystem* S_a controls subsystems $S_1 \dots S_n$ if the relation between S_a and $S_1 \dots S_n$ is such that S_a can *drive* $S_1 \dots S_n$ into states that S_a *wants* them to be in” (Flanagan, 2002, pp. 115-116). The difference between self-control (as defined above) and metaphysical freedom, as I understand it and wish to define it, is that whereas the type of self-control defined above is ultimately dependent on and determined by the laws of

nature (and thus the controlling subsystem S_a , although in control of subsystems $S_1 \dots S_n$, is determined by conditions beyond its control just as surely as the controlled subsystems $S_1 \dots S_n$ are determined by S_a), metaphysical freedom is the freedom to do otherwise even given the same initial starting conditions. Whether metaphysical freedom is possible is a separate question (one I wish to pursue in light of emergentism). However, if human beings are to be attributed with free will, it must be metaphysical freedom and not a compatibilist redefinition of the concept of free will that we have in mind when we state that some agent S was *free* to have done otherwise.

What precisely is wrong with compatibilism and how exactly does it differ from the notion of metaphysical freedom defined above? Some compatibilists maintain that the ability to do otherwise can still be accounted for in a deterministic world. “According to the advocates of this argument—let us call them ‘conditionalists’—what statements of the form... S could have done X *mean is*:...If S had chosen to do X , S would have done X ” (van Inwagen, 1975/2001, p. 27).

I think that the problem with conditionalist notions of ‘could have done otherwise’ is the following: assuming the thesis of determinism, following van Inwagen’s definition of ‘determinism,’ (according to van Inwagen (1975/2001), the truth of determinism is contingent on the laws of physics: they must be precise and not probability-driven or statistical) if the conjunction of a certain state of the world A with the laws of physics L entails the state of the world B , then given A and L , B necessarily follows. If the above is true, then it cannot be the case that one possible world P_1 (where the laws of physics consist of the set of laws L), is in state A at time t_1 , and state B at t_2 , while another possible world P_2 (which is identical to P_1 and where the laws of physics also consist of the set of laws L), is in state A at time t_1 , and state D at t_2 . Therefore, saying that ‘if S had chosen to do X , S would have done X ’ amounts to saying that although A occurs at t_1 and B comes about at t_2 in P_1 , if C had occurred at t_1 , then D would have come about at t_2 in P_2 . It is like saying that if we run a system governed by a set of laws L , starting it in an initial state A at t_1 , it will go into state B at t_2 , but if we reset the system and then run it again, starting it in an initial state C at t_1 , it will go into state D at t_2 . Although the above is true, I do not see how it captures the sense of ‘could have done otherwise,’ which is necessary for genuine alternative possibilities to be open to an agent.

If determinism is truly not compatible with metaphysical freedom (and I think that the two are *not* compatible in the way most compatibilists propose), can indeterminism do the job? The difficulty with indeterministic accounts of free will is that such views encounter the problem of arbitrariness. That is, undetermined events appear to be too “chancy” to amount to the kind of control necessary for the attribution of free will to a system. Peter van Inwagen’s concern with the chancy-ness of indeterministic causation echoes this worry. He writes:

If the laws are indeterministic, then more than one future is indeed consistent with those laws and the actual past and present – but how can anyone have any choice about which of these futures becomes actual? Isn’t it just a matter of chance which becomes

actual? If God were to “rerun” an indeterministic world to precisely its states at some time in the past, and then let the world go forward again, things might indeed happen differently the “second” time. But then, if the world is indeterministic, isn’t it just a matter of chance how things *did* happen in the one, actual course of events? And if what we do is just a matter of chance – well, who would want to call that freedom? (van Inwagen, 1998, p. 370)

The problem of metaphysical freedom in light of the adoption of physicalism appears to be unsolvable. It may very well be the case that we lack metaphysical freedom and that the only type of control we have is the kind described by compatibilists (which ultimately amounts to the conditionalist proposal mentioned above). Assuming, then, that the universe is deterministic, what precisely contributes to the problem and what is needed for metaphysical freedom to become plausible? I am assuming determinism for several reasons: (1) Many emergentist views assume determinism to be true, (2) determinism provides us with a valuable contrast with metaphysical freedom and thus drives our intuitions about how freedom of the will should be defined, and (3) indeterminism poses similar problems for the formulation of a satisfying account of free will, but it complicates matters slightly more than is necessary for my purposes in this paper.

Physicalism is often associated with reductionism. That is, all physical objects and systems must ultimately reduce to their physical constituents or parts, which ultimately determine the properties and activities of the macro-level objects or systems. However, physicalism allows for a much wider spectrum of possibilities than just the set of reductionist materialist views, which is merely a subset of a broader collection of physicalist ontologies. Emergentism is also a physicalist proposal, but it does not put forward a reductive understanding of the world and thus, may be conducive to the libertarian notion of metaphysical freedom.

The concept of emergence, very briefly summarized, states that an emergent property (1) must be novel (qualitatively different from its constitutive parts), (2) unpredictable, (3) cannot be instantiated at any lower level (cannot exist at the level of the parts that constitute it), (4) must result from an interaction between its lower-level constituents, (5) has to be holistic (that is, an emergent property must be a property of the entire system and not just a property of its parts), and (6) emergent phenomena should, at least on the classical accounts of emergence, have the capacity to exert a causal influence on their lower-level constituents. The notion of causal efficacy of emergent phenomena appears to be quite promising for libertarian accounts of freedom. Causal efficacy of higher-level properties and their influence on lower-level parts requires that higher-level properties have direct downward causal influence on the lower-level properties of the parts that give rise to the higher-level phenomena. Although the notion of macro-determinism appears to be somewhat paradoxical, downward causation is the only feature of emergent phenomena capable of providing a satisfying account of metaphysical freedom in a purely physical universe.

The reason why unpredictability cannot offer a satisfying account of freedom, whereas the notion of downward causation can, is that while the notion of downward causation points to the possibility of actual and genuine causal

influence, unpredictability is merely an epistemic constraint. To better understand this claim, let us consider Karl Popper’s argument that complete prediction in a classical, deterministic system is impossible if the predictor is part of the system. Popper (1950) considers a mechanical system *A* and a predictor *B* attempting to predict *A*. *B* can only predict *A* if it can calculate its interference with *A* (this is because *B* is a part of the system it is trying to predict). In other words, *B* must include its act of predicting *A*, and the consequent effect on *A* of such predicting, in its prediction of *A*. One way for *B* to compute its interference with *A* is to study its interfering parts *B*’ and their interaction with *A*, but this implies that *B* now needs to study the system *A* + *B*’ instead of *A* and the same problem arises again. However, although *A* cannot be predicted by even an omniscient super-calculator if the super-calculator happens to find itself within the system (that is, within the world that contains *A*), from the point of view of a timeless, space-less, and omniscient being (a being in existence outside of the system), the behaviour of *A* would be perfectly predictable; in fact, the behaviour of *B* attempting to predict *A* would likewise be perfectly predictable (it does not matter, for the purpose of the thought experiment, that such a being is implausible). Thus, the libertarian vision of freedom requires that emergent phenomena exert a direct causal control on their underlying parts and not merely that emergent phenomena be unpredictable since metaphysical freedom demands control (which downward causation is capable of providing) and does not really (or at least not merely) require unpredictability (especially if unpredictability occurs in a deterministic universe).

3. Downward Causation, Strong Emergence, and Weak Emergence

The mechanistic dogma states that everything is just a complex of physico-chemical properties and laws, which account for all higher-level properties and laws (and where such higher-level properties and laws are reducible to the lower-level physico-chemical parts that constitute them). The mechanistic dogma implies that the mind is fully reducible to its physico-chemical composition and thus is fully determined by its micro-constituents. Tim Crane writes: “[t]he central idea of the mechanical view of the mind is that the mind is a part of nature, something which has a regular, law-governed causal structure” (Crane, 2003, p. 130). The mind (a higher-level phenomenon), which is arguably necessary for metaphysical freedom, on such a view, is incapable of the type of control required by libertarian theories of free will.

Supernaturalism states that life and the mind are governed by, and thus can only be understood in terms of, supernatural forces (e.g. an *élan vital*, entelechies, etc.). Supernaturalism, however, does not appear to be compatible with physicalism and thus, given the empirical and epistemic strength of our well-established scientific theories, it lacks coherence with our already established understanding of the world, which makes supernaturalism ultimately unconvincing.

Emergentism rejects both the mechanistic dogma and supernaturalism. Emergentists do not postulate super-

natural entities, but they also reject the reductive agenda of the mechanists. Because emergentism accepts physicalism without the mechanist's reductionism, emergentists can (and often do) argue that higher-level phenomena are autonomous and that they are capable of influencing their lower-level parts. Emergentism, then, appears to be just what the libertarian needs and emergence is able to provide it without resorting to supernaturalism.

If emergence is to be the key to a libertarian conception of free will, then downward causation should be a feature of an emergentist account. Without downward causation, macro-level emergent properties are dependent on, and influenced by, their microstructure and not the other way around. In either case (no matter whether determinism or indeterminism proves true), if physical bodies are governed exclusively by a micro-dynamic, then any complex organism's actions are dependent on the micro-level interactions of the organism's micro-parts.

The British Emergentists argued for several features characteristic of emergent phenomena: one salient feature is the causal efficacy of the macro-level emergent phenomena and another is the unpredictability of such phenomena. According to Mark A. Bedau (1997), there are two hallmarks of emergent phenomena, namely that (1) emergent phenomena are constituted by and generated from underlying processes (that is, the emergent macro-states of a system are structural properties constituted entirely out of the system's microstates) and that (2) emergent phenomena are autonomous from underlying processes. Bedau, in "Weak emergence," calls these types of views (accounts of emergence that postulate downward causal influence of macro-level on micro-level properties) *strong* emergent views and distinguishes them from his own *weak* emergent proposal.

What differentiates weak emergence from strong emergence, then, is the weak emergentist rejection of downward causation and the views about unpredictability. With regards to the latter, Bedau states that weakly emergent phenomena are, in principle, predictable, but that they are derivable only via simulation.

According to Bedau, derivations that depend on simulations are:

- (1) massively contingent (they include a great deal of accidental information about the system's components and the external conditions).
- (2) For this reason, derivations can be too detailed and unstructured for anyone to understand how they work.
- (3) Finally, such derivations can obscure simpler (macro-level) explanations of the same macrostates, which occur in systems with different microdynamics and different external conditions.

Bedau states that the derivation of weakly emergent macrostates requires simulation even if the predictor is a powerful super-calculator (e.g. a Laplacian demon). A super-calculator would have a decisive advantage over human beings in calculation speed, but the derivation would still be based on simulation.

The characteristic mark of *strong* emergent phenomena can be captured by means of four conditions, which need to be satisfied if a property is to be termed an "emergent property." (1) An emergent property *P* is, in principle, unpredictable from its lower-level microstructure even if one is given a complete theoretical knowledge of the micro-

structure, including the initial conditions and the micro-dynamic, such as laws of nature, governing the microstructure. (2) *P* is novel in that it is substantially different from its underlying microstructure. (3) The microstructure underlying *P* exhibits a greater degree of variance from moment to moment than does *P* (that is, *P* persists even if the microstructure fluctuates – even if the constituent parts of *P* change or are replaced). And (4) *P* causally influences at least some of the properties in the underlying microstructure.

The above characterization of emergent phenomena is borrowed from Robert L. Klee (1984). Emergence might be characterized in slightly different ways, but I think the above captures the essential emergentist argument. For another characterization, see Paul Humphreys' (1997) "Emergence, not supervenience." Humphreys defines emergence as follows: (1) emergent properties are novel, (2) emergent properties are qualitatively different from the properties from which they emerge, (3) an emergent property is such that it could not occur at a lower level, (4) different laws apply to emergent phenomena than to the microstructure such phenomena emerge from, (5) emergent properties "result from an essential interaction between their constituent properties, an interaction that is nomologically necessary for the existence of the emergent property" (Humphreys, 1997, p. S342), and (6) emergent properties are holistic (they are properties of the entire system and not just properties of the constitutive parts).

Bedau criticizes *strong* emergence on the grounds that it is metaphysically illegitimate and that it is inconsistent with materialism because it postulates downward causation (he also suggests that *strong* emergence is not scientifically useful). Weak emergence, on the other hand, Bedau claims, is: (i) metaphysically innocent because it does not commit itself to downward causation, (ii) scientifically useful in that the concept, as well as terminology, is ubiquitous in the thriving scientific research into complex systems, and (iii) it is consistent with materialism. Bedau further argues that weak emergence retains the two hallmarks of emergent properties.

Weak emergence faces at least two objections: (1) It can be objected that weak emergence applies too widely and too arbitrarily and thus that it is too weak (that is, weak emergence does not demarcate an interesting class of phenomena or it applies to phenomena that are not emergent). Bedau responds by stating that not all emergent phenomena need to be interesting to be labelled emergent. (2) One may also object that the concept of weak emergence is useless because we do not generally have proof that a given macrostate of a system is un-derivable without simulation. Bedau responds by stating that unproven weak emergence claims still possess substantial empirical support.

It may be useful to consider a possible reason for Bedau's claim that downward causation is metaphysically illegitimate. Jaegwon Kim (2000) argues that emergentism is committed to the supervenience thesis because "if two systems are wholly alike physically, we should expect the same mental properties to emerge, or fail to emerge, in each" (Kim, 2000, p. 38).

Let's turn to Broad's (1925) example of emergent phenomena in order to understand Kim's claim:

Oxygen has certain properties and Hydrogen has certain other properties. They combine to form water, and the proportions in which they do this are fixed. Nothing that we know about Oxygen by itself or in its combinations with anything but Hydrogen would give us the least reason to suppose that it would combine with Hydrogen at all [and vice versa] ... And most of the chemical and physical properties of water have no known connexion, either quantitative or qualitative, with those of Oxygen and Hydrogen. Here we have a clear instance of a case where, so far as we can tell, the properties of a whole composed of two constituents could not have been predicted from a knowledge of the properties of these constituents taken separately, or from this combined with a knowledge of the properties of other wholes which contain these constituents. (Broad, 1925, pp. 62-63)

It is important to note that even if the properties we associate with water are emergent, when oxygen and hydrogen combine to form H₂O, "the proportions in which they do this are fixed" (Broad, 1925, p. 62). That is, every time the proportions of hydrogen to oxygen exhibit this 2-1 ratio, we can expect the emergent properties to occur. Since emergent properties display this intimate connection to the structural properties of their constituent parts, they appear to be dependent on those micro-level structural properties of the lower-level parts that constitute the *emergent* whole. Emergentism, then, appears to be committed to the view that macro-level phenomena supervene on micro-level phenomena.

If emergent phenomena supervene on their micro-level constituents (and if the mind is an emergent property that supervenes on the physical properties of the brain), then the notion of downward causation (and thus also the notion of mental causation) faces the problem of causal exclusion. The problem of causal exclusion, as outlined by Kim, states that the physical cause threatens to exclude the mental cause. In other words, the micro-level cause threatens to exclude the macro-level cause (if there is such a thing at all). Assuming that mental event *M* supervenes on physical event *P* (as would be the case if mental properties were emergent properties), if *M* is said to cause a mental event *M**, then, if we adopt physicalism and reject any sort of dualism, *M** must also have a subvenient physical event *P** on which it (*M**) supervenes. If this is true, then since *M* is dependent for its existence on *P*, the occurrence of *M** must also be dependent on the existence of *P**. That is, if *P** did not exist, neither could *M**. Thus, since there must be a causal link between *P* and *P** at the lower, physical level, *P*'s causal efficacy appears to be sufficient for explaining the occurrence of *P**. If *M* supervenes on *P*, then *M*'s existence is possible if and only if *P* also exists (the same must be said of the relationship between *M** and *P**). This holds even if the multiple realizability thesis is true; even then, *M* will depend for its existence on some physical state (*M* must be realized by some *P*). Thus, it would appear that either *M* is not causally efficacious or that *M* can only be causally efficacious in the presence of *P*. If the first alternative is true, then *M* is merely epiphenomenal and if the latter is true (that *M* can only be causally efficacious if *P* is present), then we are faced with a case of over-determination (one reason why over-determination is problematic is that it actually contributes to the problem of causal exclusion). Either way, *M* does not seem to be necessary for *M** to obtain (all that is required is the presence of *P*).

I cite Kim's much more eloquent explanation of this problem:

[T]o acknowledge that *p* has also a physical cause, *p**, at [time] *t* is to invite the question: Given that *p* has a physical cause *p**, what causal work is left for *m* [a mental event] to contribute? The physical cause therefore threatens to exclude, and pre-empt, the mental cause. (Kim, 2000, p. 37)

Therefore, if mental events are emergent, but downward causation is problematic, then mental causation is problematic. It would appear that even though we have the experience of causing our actions (after all, we commonly perceive the causal efficacy of our own minds), our mental states may not actually be causally efficacious. If mental causation proves to be just an illusion (in light of the supposed illegitimacy of downward causation), then free will must also be illusory (see McDermott, 2001; Smilansky, 2000; and Wegner, 2002 for, respectively, computational, philosophical, and psychological explorations of the thesis that free will is an illusion).

If determinism proves to be true (and downward causation proves to be metaphysically illegitimate and therefore false), free will must be illusory because if it is not the case that we have the right kind of control over our actions, then we are still in possession of the experience of this kind of control. That is, we feel free when we act. If we are determined to act in the ways we do, then the experience of free will (the feeling of control) must be illusory.

Should we commit ourselves, then, to Bedau's *weak* emergent view and give up the prospect of metaphysical freedom (or at least abandon the possibility that emergentism is the key to libertarian freedom)? Perhaps emergentism may still offer some hope for libertarians. Strong emergence (especially in its more contemporary form) is weaker than the theories espoused by the British Emergentists and thus, may, in fact, prove to be just the kind of view for which the libertarian about free will is searching.

4. Macro-Determinism

The Nobel laureate neurobiologist and neuropsychologist R. W. Sperry (1986) claims that a strict micro-determinism cannot fully account for emergent properties. Sperry argues that emergent macro-level phenomena exert causal influence on their micro-level parts. Sperry explains, however, that such macro-determinism does not negate or displace micro-determinism, but rather that it supplements it. Thus, although Sperry's version of downward causation is reminiscent of the stronger versions of emergence, I read Sperry (and his supporters) as taking a middle ground between strong and weak emergence. In fact, Sperry's conception of macro-determinism is not as strong as that of the British Emergentists'. That is, Sperry's view does not disregard micro-determinism, but merely adds to it.

Sperry compares the mind exercising influence over the brain to a computer's software wielding downward causal control over the computer's micro-physical elements:

[M]any agree that the 'macro' computer software programs exert downward causal control over their electronic and other micro-physical correlates and, just like the conscious mental programs

in the brain, have their own dynamics, properties, and laws of progression and interaction distinctly different from those of the underlying microphysics. (Sperry, 1986, p. 269)

Sperry explains that “[t]he emergent properties of the entirety and the laws for its causal interactions are determined by the spacing and timing of the parts as well as by the properties of the parts themselves” (Sperry, 1986, p. 266). Sperry, in his 1964 *James Arthur Lecture* titled “Problems outstanding in the evolution of brain function,” gives a telling example of what he means by macro-determinism:

[R]ecall that a molecule in many respects is the master of its inner atoms and electrons. The latter are hauled and forced about in chemical interactions by the overall configurational properties of the whole molecule. At the same time, if our given molecule is itself part of a single-celled organism such as paramecium, it in turn is obliged, with all its parts and its partners, to follow along a trail of events in time and space determined largely by the extrinsic overall dynamics of *Paramecium caudatum*. (as cited in Sperry 1986, 265-266)

It would appear, then, that downward causation may, in fact, turn out not to be metaphysically illegitimate. However, the pressing question, one that Robert L. Klee (1984) considers, is whether macro-determinism is truly a case of downward causation or whether such apparent higher-level efficacy is in reality reducible to micro-level properties?

Klee argues for micro-determinism, the view that parts determine wholes. He states that it is “a prevalent belief among both scientists and philosophers that, for most systems in nature, higher-levels of organization are by and large determined (and therefore explained) by lower-levels of organization” (Klee, 1984, p. 44). Direct determination from the macro-levels to the micro-levels, according to Klee, seems somewhat mysterious and supporters of such views are forced to resort to “metaphors and analogies to illustrate the ‘how’ and the ‘why’ of this kind of macro-determinism ... But is this a kind of determinative influence really in conflict with a micro-deterministic view of the world” (Klee, 1984, p. 60)? The metaphors and analogies Klee is referring to are Sperry’s examples of a wheel and the molecules that constitute it and of a local eddy in a stream and the water molecules that make it up. He writes:

[t]he macro-determinative influence of consciousness on underlying micro-states of the brain is *like*, says Sperry, the macro-determinative influence that the whole wheel has on an individual molecule within it in virtue of which the molecule goes only where the whole wheel goes. Or again, says Sperry, it is like the kind of determinative influence a local eddy in a stream has on an individual water molecule within it in virtue of which the molecule goes in the direction in which the entire eddy is flowing. (Klee, 1984, p. 60)

Klee continues:

To be sure, this is the kind of determination which is ‘holistic’ insofar as the effect is transmitted to the molecule through a larger holistic micro-structure. But it does not seem ultimately to be a kind of determinative influence that can’t be given a basically micro-level mechanism; that is, we want to know how the motion of the whole wheel influences the motion of the molecule and *that* story, while involving the holistic aspect of the molecule’s participation in a larger structure, will primarily involve same level

connections—micro-connections ... The means of effecting the determinative influence seem same-level, i.e. a micro-story is to be told. (Klee, 1984, p. 61)

Klee’s point is that the causal efficacy of any given system is to be found at the micro-level, even if we can engage in higher-level descriptions of systems interacting with other systems. The complex interactions of parts (both inter-systemic and intra-systemic) are ultimately micro-explainable. That is, all macro-level phenomena and events are reducible to their micro-level constituents and these constituents are ultimately responsible for the macro-level properties.

Timothy O’Connor (1994), in his defence of the possibility of macro-determinism, explains that Sperry’s notion of downward causation is compatible with the supervenience thesis and with micro-determinism. He states that macro-determinism (as Sperry understands it) does not disrupt or intervene in the causal relations that occur at the micro-level, but rather that it supervenes in a way that leaves micro-interactions unaffected. O’Connor cites Sperry’s (1991) paper “In defense of mentalism and emergent interaction”:

These micro interactions and the interrelations of all the infrastructural components become embedded within, enveloped, and as a result are thereon moved and carried by the property dynamics of the larger overall system as a whole ... that have their own irreducible higher-level forms of causal interaction. A molecule within a rolling wheel, for example, though retaining its usual inter-molecular relations within the wheel, is at the same time, from the standpoint of an outside observer, being carried through particular patterns in space and time determined by the over-all properties of the wheel as a whole. There need be no “reconfiguring” of molecules relative to each other *within the wheel itself*. However, *relative to the rest of the world* the result is a major “reconfiguring” of the space-time trajectories of all components in the wheel’s infrastructure. (as cited in O’Connor, 1994, p. 101)

The idea is that the emergent property and the resulting relational structure of the micro-parts are instantiated simultaneously. That is, the relation between the macro and the micro is not that of an efficient cause to an effect, but rather that even though there is causal interaction at the micro-level, the macro-level dictates certain structural properties of the micro-parts and thus becomes a salient part of the causal story. O’Connor explains that on Sperry’s view, “an emergent determines (in large part) a relational complex *that cannot be adequately described in terms of lower level components and their micro-relations* [and thus], the micro-physical laws are inadequate for, cannot be applied to, such situations” (O’Connor, 1994, p. 102). Sperry argues that “[m]icro-determinism is retained but is held to be incomplete, insufficient. The properties, forces and laws of micro-events are shown to be encompassed and superseded, not disrupted, by the properties, forces, and laws at macro-levels” (Sperry, 1986, p. 268). That is, macro-level determination does not displace, but only supplements micro-determination.

Thus, if we accept Sperry’s macro-determinism and follow O’Connor in admitting that Sperry’s approach is both conceptually and empirically viable, then perhaps free will (in the libertarian sense) is also conceptually and empirically viable. After all, it does seem to us that we are

free. The experience of free will accompanies many of our actions and we feel as though we could have done otherwise. That is, we feel as though we exert causal influence on our environments, bodies, and actions; we feel that we are self-determiners.

However, Klee's scepticism is not ungrounded. That is, even though wholes are structurally different from their constituents in that wholes are the structural complexes into which their constituent parts are arranged, it is these constituents that are ultimately responsible for the structural complexes of the wholes of which they are parts. Whatever emergents there may be (and however "autonomous"), they necessarily depend on their micro-structure and thus it is the micro-structure that is responsible for any macro-level properties and macro-level causation. But if this is the case, then we either run into the problem of over-determination or the problem of causal exclusion. The principle of parsimony suggests that since micro-determinism appears to give us a complete explanatory story, we need not postulate macro-determinism.

It may be worth examining Sperry's examples in order to better understand Klee's concern. Sperry states that a whole wheel (or a local eddy in a stream) has macro-determinative influence on the individual molecules that make it up (the molecules that make up the wheel or the eddy). However, as Klee explains, the "higher-level motion of the whole wheel or eddy has an influence on the lower-level individual molecule through the fact that the molecule bears intimate structural micro-connections with neighboring molecules in the wheel or eddy" (Klee, 1984, pp. 60-61). The wheel or the eddy do not set the molecule into motion, but rather the eddy's or the wheel's motions are a result of the molecule's intimate connection to other molecules. The eddy or the wheel are constituted by certain molecules that are in a certain relational configuration. The motion of the molecule, then, "is dictated to the molecule in virtue of its participation in the total micro-structure of the wheel or eddy" (Klee, 1984, p. 61), but the micro-structure that exerts a causal influence on the molecule is itself a lower-level phenomenon.

One way of understanding Klee's objection is by means of an analogy with Conway's Game of Life. The Game of Life is a cellular automaton devised by the British mathematician John Conway. The universe of the Game of Life consists of a two-dimensional grid of square cells or pixels. Each cell can be in one of two possible states (either *live* or *dead*, ON or OFF). Time, in the Game of Life, is discrete and the state of every cell at time t is a function of the states of its neighbouring cells at time t_1 . The micro-dynamic governing the states of every cell (at any given time step) consist of four rules (dubbed the "birth-death rule"):

1. Any live cell with fewer than two live neighbours dies, as if by loneliness.
2. Any live cell with more than three live neighbours dies, as if by overcrowding.
3. Any live cell with two or three live neighbours lives, unchanged, to the next generation.
4. Any dead cell with exactly three live neighbours comes to life.

There are various stable patterns that "emerge" in the Game of Life, some of the favourites are given names (e.g. gliders, which maintain their structural integrity as the

pixel pattern is transcribed across the grid in accordance with the four simple rules mentioned above). Patterns are also grouped into categories (e.g. still lifes, oscillators, spaceships, etc.).

If we identify the molecules in Sperry's wheel or eddy example as being analogous with the single cells or pixels in the Life World and if we draw an analogy between the wheel or eddy and the *emergent* patterns that are constituted by the pixels and the micro-dynamic, then Klee's case should become clear. The pixels or cells enter into a certain micro-structure when they interact with each other. Their interaction happens in virtue of the birth-death rule. A glider in the Life World, then, can be imagined to exert a causal influence on the pixels that constitute it because the pixels appear to move in the direction the glider takes them inside the two-dimensional Life World space. However, the existence of the glider itself depends, first and foremost, on the life-death rule's influence on the pixels. The pattern (i.e. the glider), is an emergent (though only a weakly emergent) and persisting entity, but is fully caused by the micro-dynamic that influences the pixels, which constitute the pattern.

Returning to Sperry's example, the molecules in the eddy (or the wheel) do go wherever the eddy takes them, but the eddy itself does not govern their movement because the eddy's movement is, in fact, nothing more than the result of the complex interaction between the molecules that constitute it. And the molecules themselves are governed by micro-level forces. Ultimately, then, the only explanatory causal story we need to give is a micro-level story. Perhaps the only coherent account of emergence is Bedau's weak emergence (however *weak* it may actually be).

If downward causation is not a feature of emergent phenomena, then emergent entities (such as minds, for instance) cannot exercise causal influence on their constituents and are themselves fully determined by their micro-level parts. It would appear, then, that in the absence of downward causation (which seems to be implausible at best), libertarians about free will must either find another metaphysical (or scientific) grounding for their conception of freedom or they must give it up in favour of a hard-deterministic position (or alternatively a compatibilist view). In either case, the notion of a self-determining agent faced with open alternative possibilities between which the agent "freely" chooses must be abandoned (although open alternative possibilities would actually exist on an indeterministic view, that would not necessarily give rise to the type of control required for free will – chancy-ness or randomness does not lend itself to genuine metaphysical freedom). Roderick Chisholm's (1964) Aristotelian unmoved mover does not make much sense in a world ultimately governed by the *mover's* parts (or even, as seems to be the case given the discussion thus far, governed by the parts of the mover's parts).

5. A World Without Freedom: A World Without Macro-Determinism

If the strong emergentist conception of macro-determinism is untenable, then it does not appear to be the case that libertarian free will is possible (even if we assume that the

types of weakly emergent phenomena Bedau discusses do actually exist). What are we left with if macro-determinism and thus, by extension, the libertarian conception of free will prove to be false? We may not be losing out on that much (or perhaps even on nothing at all) if determinism proves to be true while libertarian free will turns out to be a mere illusion. As Dennett explains:

After all, if determinism is true now, it always has been true ... Modern science isn't *making* determinism true, even if it is discovering this fact, so things aren't going to get worse, unless it is believing in determinism rather than determinism itself that creates the catastrophe. (Dennett, 1984, p. 15)

Assuming that we all have the experience of free will (that is, assuming that we all feel as though we act freely and as though we exercise an agent-causal control over ourselves and our actions), if determinism is the case, then the experience of free will must be just an illusion. That is, if we grant the truth of determinism (and thus that metaphysical freedom does not exist), we must be illusionists about free will because we are all "stuck," as it were, (at least for the most part) with an experience of freedom. The same would be true, however, if the universe turns out to be indeterministic. Peter van Inwagen (1998) raises this worry. He writes:

But then, if the world is indeterministic, isn't it just a matter of chance how things *did* happen in the one, actual course of events? And if what we do is just a matter of chance — well, who would want to call that freedom? (van Inwagen, 1998, p. 370)

Although Dennett's words may, at first glance, be somewhat comforting (after all, if determinism is true, nothing will really change for us since it is true now and always has been the case), there appears to be a problem with reconciling determinism (or, alternatively, indeterminism) and moral responsibility. That is, since our commonsense notion of moral responsibility depends on our belief in our own free agency, if we abandon libertarianism, then what can we make of moral responsibility? It may, in fact, be the case that even though the truth of determinism is quite harmless, the knowledge of (and thus the belief in) the truth of determinism, as Dennett suggests, can cause the catastrophe. There have been many attempts at reconciling moral responsibility with determinism. I do not have the luxury of space, in this paper, to sketch even a few of these approaches and thus, I shall focus on just one (arguably the most robust). See Lenart (2007) for an initial sketch of the following argument

6. Strawson's Reactive Attitudes

Peter Strawson (1963/2004) in his seminal paper "Freedom and resentment," offers an interesting solution to the problem of moral responsibility. He argues that punishment, ethical approval, or moral condemnation are practices or attitudes central to human relationships and interactions. He mentions two types of attitudes: (1) attitudes that permit (and sometimes even require) detachment from an action or from the agent responsible for an action, and (2) "non-detached attitudes and reactions of people directly involved

in transactions with each other ... attitudes and reactions of offended parties and beneficiaries ... [these being] such things as gratitude, resentment, forgiveness, love, and hurt feelings" (Strawson, 1963/2004, p. 75).

Interpersonal relating gives rise to these reactive attitudes because it genuinely matters to us whether people are affectionate toward us, or if they exhibit contempt or malevolence, etc. While Strawson focuses on cases where reactive attitudes are natural, he also reflects on cases where special considerations might modify or mollify the natural feelings of affection or resentment; these include such things as unintentional actions or instances where an agent could not have done otherwise due to direct coercion. Nevertheless, these kinds of circumstances are not generalizable and thus under normal conditions, we do not usually, nor are we expected to, suspend our ordinary reactive attitudes. Such circumstantial excuses, however, "do not invite us to view the *agent* as one in respect of whom these attitudes are in any way inappropriate" (Strawson, 1963/2004, p. 77). A second set of excusing conditions consists of (1) individuals temporarily acting out of character, and (2) individuals permanently incapable of appropriately engaging in interpersonal relationships:

The second and more important subgroup of cases allows that the circumstances were normal, but presents the agent as psychologically abnormal—or as morally undeveloped. The agent was himself; but he is warped or deranged, neurotic or just a child. When we see someone in such a light as this, all our reactive attitudes tend to be profoundly modified. (Strawson, 1963/2004, p. 79)

Strawson argues that human beings are naturally committed to interpersonal human relationships, which require interpersonal attitudes (which are, simply stated, attitudes we adopt or have towards others). Interpersonal attitudes, in turn, require reactive attitudes, which are natural human reactions to the actions of others. He writes: "This commitment is part of the general framework of human life, not something that can come up for review ... [hence] the truth or falsity of a general thesis of determinism would not bear on the rationality of *this* choice" (Strawson, 1963/2004, p. 83).

The reactive attitudes can be of a vicarious nature (where we experience reactive attitudes on behalf of others). Such reactive attitudes find their analogues in our morality as moral reactive attitudes, which are of a vicarious nature. Such vicarious reactive attitudes are sympathetic, impersonal, disinterested, or generalized analogues of the reactive attitudes and deal not so much with resentment as with moral indignation or disapprobation. "They are reactions to the qualities of others' wills, not towards ourselves, but towards others. Because of this impersonal or vicarious character, we give them different names" (Strawson, 1963/2004, p. 83), we call them moral reactive attitudes. Strawson emphasizes: "It is not that these attitudes are essentially vicarious—one can feel indignation on one's own account—but that they are essentially capable of being vicarious" (Strawson, 1963/2004, p. 84). Moreover, they can be applied to ourselves (that is, they can serve as demands on ourselves for others). Such vicarious and self-directed reactive attitudes find their analogues in our morality as moral reactive attitudes.

Strawson argues that we are incapable of suspending our reactive attitudes because our human nature (i.e. our social nature) requires interpersonal relationships. Thus, the reactive attitudes and their moral analogues are as deeply ingrained in our nature as is our inclination toward interpersonal relationships. Strawson writes:

Finally, to the further question whether it would not be *rational*, given a general theoretical conviction of the truth of determinism, so to change our world that in it all these attitudes were wholly suspended, I must answer, as before, that one who presses this question has wholly failed to grasp the import of the preceding answer, the nature of the human commitment that is here involved: it is *useless* to ask whether it would not be rational for us to do what is not in our nature to (be able to) do. (Strawson, 1963/2004, p. 87).

7. Illusionism About Free Will

Many of our choices are accompanied by the phenomenal experience of what I have been calling metaphysical freedom; that is, many of our choices are coupled with the sensation that *we could have done otherwise* and with the feeling that *it was one's will that caused one's action*. In his book, *The Illusion of Conscious Will*, the Harvard psychologist Daniel Wegner writes:

The notion that will is a force residing in a person results in a ... problem. Hume ... pointed out that causality is not a property inhering in objects ... you can't *see* causation in something but must only infer it from the constant relation between cause and effect. Every time the ball rolls into the pins, they bounce away. Ergo, the ball caused the pins to move. But there is no property of causality ... hanging somewhere in space between the ball and pins ... Causation is an event, not a thing or a characteristic or attribute of an object. In the same sense, causation can't be a property of a person's conscious intention. You can't *see* your conscious intention causing an action but can only infer this from the constant relation between intention and action. (Wegner, 2002, p. 13)

Wegner defines conscious will as (1) the phenomenal experience of performing an action (actions either feel willed or they do not), or (2) as the causal link between mental states and actions. The mistaken assumption that (1) and (2) are identical is, according to Wegner, precisely the source of the illusion of conscious will.

Wegner's Theory of Apparent Mental Causation states that "[p]eople experience conscious will when they interpret their own thought as the cause of their action" (Wegner, 2002, p. 64). The phenomenal experience of consciously willing something is produced by what Wegner calls *priority*, *consistency*, and *exclusivity*. "For the perception of apparent mental causation, the thought should occur before the action, be consistent with the action, and not be accompanied by other potential causes" (Wegner, 2002, p. 69).

The Priority Principle is a causal principle stating the precedence of causes to their effects. If a person experiences X as causing Y, then, according to the Priority Principle, X must necessarily precede Y, and X cannot occur after Y, nor too long before the occurrence of Y. For example:

When one billiard ball strikes another, the struck ball moves in the same general direction that the striking ball was moving. We

do not perceive causality very readily if the second ball squirts off like squeezed soap in a direction that, by the laws of physics, is inconsistent with the movement of the first ball. (Wegner, 2002, p. 78)

Wegner explains the Exclusivity Principle as follows: "[w]hen their own thoughts do not appear to be the exclusive cause of their action, they experience less conscious will. And when other plausible causes are less salient, in turn, they experience more conscious will" (Wegner, 2002, p. 90). Wegner postulates that the causes of human actions are in fact complex mechanisms hidden from conscious observation. He writes: "[w]e must remember that this analysis suggests that the real causal mechanisms underlying behavior are never present in consciousness. Rather, the engines of causation operate without revealing themselves to us and so may be unconscious mechanisms of mind" (Wegner, 2002, p. 97). He further argues that actions can occur without sufficient intentions, and that we compensate for such moments by confabulating the non-existent intentions.

When life creates all the inevitable situations in which we find ourselves acting without appropriate prior conscious thoughts, we must protect that illusion of conscious will by trying to make sense of our action. We invent relevant thoughts according to the template that conscious agency suggests. (Wegner, 2002, p. 157)

He adds that cognitive dissonance explains how people revise their attitudes in order to justify their actions.

In a nutshell, the theory says this happens because people are motivated to avoid having their thoughts in a dissonant relationship, and they feel uncomfortable when dissonance occurs. The strongest dissonance arises when a person does something that is inconsistent with a preexisting attitude or desire. (Wegner, 2002, p. 172)

Wegner compares the will to a compass, explaining that in the same way that a compass reading does not have any causal efficacy on the ship's actual direction, the will itself does not cause human behaviour, but, like a compass reading, the will can be a good gauge to which we can refer as we steer, internalize, and appropriate our actions. He writes: "the occurrence of conscious will brands the act deeply, associating the act with self through feeling, and so renders the act one's own in a personal and memorable way. Will is a kind of authorship emotion" (Wegner, 2002, p. 325).

Conscious will is particularly useful, then, as a guide to ourselves. It tells us what events around us seem to be attributable to our authorship. This allows us to develop a sense of who we are and are not. It also allows us to set aside our achievements from the things that we cannot do. And perhaps most important for the sake of the operation of society, the sense of conscious will also allows us to maintain the sense of responsibility for our actions that serves as a basis for morality. (Wegner, 2002, p. 328)

8. Reactive Attitudes and the Benefits of Illusionism

Saul Smilansky observes that "if libertarian assumptions carry on their back the CC [Core Conception] distinctions,

which would not be adhered to sufficiently without them, an illusion which defends these libertarian assumptions seems to be just what we need” (Smilansky, 2000, p. 173) (the Core Conception is the elementary ethical conception that takes as its focus the necessity of considering free will as a prerequisite for morality). In other words, the belief in free will may serve as a vehicle for our acting morally much of the time.

In “Free will and respect for persons,” Smilansky argues that the truth or falsity of determinism does not affect our ability to hold people morally accountable for their actions. As already stated above, Strawson argues for a similar conclusion. It is crucial, however, that morally accountable individuals be in possession of certain rational capacities (such as the capacities for awareness, deliberation, choice, and intentional action), which enable them to act *responsibly*. On the Strawsonian view, “normal” adults belong to a *community of responsibility* (which, roughly stated, consists of members of a certain community who share a given set of moral reactive attitudes). It is quite irrelevant, for both Strawson and Smilansky, whether a *normal* adult human has metaphysical freedom (libertarian free will) or whether she is fully determined. What is of importance is that she has all the required capacities to be held responsible by her peers in the “Community of Responsibility.” Smilansky, however, continuously (both in his 2000 book as well as in his 2005 article and on many occasions in each) worries about the problem of the ultimate arbitrariness of all moral judgments (this ultimate arbitrariness stems from the admission that free will is nothing more than an illusion):

While membership in a Community of Responsibility permits punishment of the guilty student, it at the same time forbids ‘punishment’ of the innocent one. Nevertheless, the actions of the drug dealer [the guilty student] were, in one way, merely an unfolding of the given, of matters that, causally constituting her, were ultimately beyond her control. Together with the moral obligation to respect and to track (in our own reactions and practices) identity, choice, and responsibility, we must also not forget the ultimate *arbitrariness* of it all. (Smilansky, 2005, p. 256)

Nonetheless, Smilansky argues that Strawsonians should adopt illusionism because a state of affairs where we would not need recourse to illusion, but determinism would still be true, carries a price we cannot afford. The knowledge of determinism (and thus the knowledge of our lack of control over ourselves and our actions), according to Smilansky, would “put our moral house at grave risk” (Smilansky, 2005, p. 257). He continues: “The moral house we have is essentially a Community of Responsibility ... In short, the ethical importance of the Community of Responsibility should be taken very seriously, but the ultimate perspective threatens to *present* it as a farce, a mere game without foundation” (Smilansky, 2005, p. 257). Therefore, the *illusion* of freedom is actually both necessary and good for the Strawsonian notion of reactive attitudes. Regarding the necessity of the illusion of metaphysical freedom, Smilansky writes:

Respect for persons requires on the one hand respect for agency, the establishment of a moral order based on responsibility, and the attempt at human empowerment within compatibilist spheres;

on the other hand, it requires recognition of the limitations and shallowness of these spheres, where everything that goes on is ultimately an unfolding of the given, beyond anyone’s control. This dissonance already calls for illusion to serve a ‘functional’ role, that of safeguarding the partly valid compatibilist-level ‘form of life’ (a primary condition for respect for persons) from the threat of the ultimate hard determinist perspective that levels all of us. But beyond the ‘functional’ stage lies the ‘existential’ stage, where philosophically we can recognize how intimately our fundamental evaluations of ourselves and of others, and of our reactions to one another, depend on the false libertarian picture. We confront the deep dangers of awareness and internalization of the truth. At the depths, the libertarian illusion is constitutive of our very humanity; it is a condition for deep self-respect and for respect for persons. (Smilansky, 2005, pp. 260-261)

Even if the emergentist view does not offer libertarian freedom, our moral lives appear to be safe from the dangers posed by determinism because, for whatever evolutionary reason, we have been endowed with the illusion of free will, which acts as a vehicle for human dignity and our commonsense notion of moral responsibility.

Moreover, the mere illusion of conscious willing and metaphysical freedom has its advantages. Wegner reports on findings by Rodin & Langer (1976 and 1977) that elderly individuals who are given new responsibilities like watering plants, which generally amount to novel control opportunities in their lives, tend to display renewed psychological and physical resilience. Along these same lines of discovery, Bulman & Wortman (1977) found that victims of psychologically debilitating accidents who assumed responsibility for their misfortune were better able to cope with their calamity. Wegner comments: “the habit of taking responsibility seemed to carry over from the accident into the pursuit of adjustment in the aftermath ... it is reasonable for a person who perceives control in one area to suspect the possibility of such control in another” (Wegner, 2002, p. 330).

Wegner argues that the illusion of metaphysical freedom is the building block of both human psychology and the very fabric of our social life. “It is only with the feeling of conscious will that we can begin to solve the problems of knowing who we are as individuals, of discerning what we can and cannot do, and of judging ourselves morally right or wrong for what we have done” (Wegner, 2002, p. 342). The illusion of free will, according to Wegner, is the source of our humanity and the dignity with which we endow it.

9. Weak Emergence, Illusionism, and Human Dignity

The dignity with which we endow human beings is a measure of the respect bestowed upon them. Dignity can be understood as a relation of respect toward the moral interests of individuals. This can certainly be unpacked in a number of different ways, but the Strawsonian model of reactive attitudes is definitely robust enough to encompass and bestow this sense of dignity through the processes involved in what Strawson calls vicarious reactive attitudes (see Wilson-Lenart (2014) for a care-ethically grounded discussion of dignity).

Insofar as illusionism about free will grounds the Strawsonian notion of reactive attitudes, so the illusion of freedom also grounds the mechanisms that bestow dignity on moral actors, agents, and patients. This particular connection between illusionism and dignity may, however, seem problematic to those with reductive tendencies. It may be argued, after all, that since human agency is ultimately reducible to the motions of our constitutive parts, not only human freedom, but also human morality and dignity are similarly reducible to nothing more than simple, predictable processes, which themselves are neither moral nor dignified.

While the postulation of downward causation would perhaps make for the strongest response to this objection, emergentism in its weaker forms nevertheless offers a non-reductive picture of human beings and their complex mental lives. Human beings (or more technically, *persons*), on this view, are wholes that are irreducible to their constitutive parts (the parts that constitute the individualized physical instantiations of the species *Homo sapiens*); and while the absence of downward causation most likely entails that human beings do not enjoy metaphysical freedom, persons nevertheless navigate a complex moral matrix constituted by dynamic and emergent moral reactive attitudes, and in virtue of so doing, persons generate dignity in a way that machines or naturalistic processes cannot. Moreover, the persistent and unshakable illusion of freedom, which buttresses these moral reactive attitudes (and thus the resultant dignity of entities with such moral capacities), is itself an emergent manifestation of the complex mental properties that generate it, and in so being, is an irreducible property of human minds and human nature, one that not only makes human beings special and unique, but also morally considerable and dignified.

10. Conclusion

While Sperry's emergentism does not ultimately succeed in promoting a notion of downward causation of sufficient utility to libertarians in search of metaphysical freedom, it nevertheless does contribute to an understanding of the human agent as a unique and dignified whole that is not reducible to its simpler, morally irrelevant parts. This view of the human agent is further buttressed by both the philosophical and psychological arguments offered, respectively, by Smilansky and Wegner, who argue that the very processes responsible for the illusion of conscious willing and metaphysical freedom are in fact also responsible for both the overall well-being as well as dignity of individuals (complex systems) with the capacity to generate the phenomenal experience of freedom.

Furthermore, although given all of the above considerations, conscious willing and thus the phenomenal experience of metaphysical freedom are likely merely illusory, beings like us (ones that emerge out of the complex whirl of various lower-level processes) are nevertheless not morally inert, as Strawson's proposal that reactive attitudes are capable of grounding the moral fabric of interpersonal relating helps alleviate the libertarian's worry about moral responsibility.

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Il discorso astrologico sulla “cometa” del 1572 del carmelitano Francesco Giuntini: aspettative e inquietudini dal cielo alla terra nell’epoca della Controriforma

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Abstract: The *nova* star that appeared in 1572 (known today as Tycho’s supernova) was considered to be a comet, rather than a star, by many astronomers and observers of that time. Francesco Giuntini (1522-1590), a Florentine man of letters, Carmelite theologian, and skilled astrologer, was among those who regarded the unexpected nocturnal light as a sublunary comet, albeit with some inconsistencies. The identification of the *nova* with a cometary phenomenon was in accordance with the “standard physics” of the late Renaissance, namely Aristotelian natural philosophy, which was still being taught and learned as the common basis of knowledge in universities and colleges all across Europe. From this point of view, Giuntini conformed his understanding of the *nova* to the general scientific framework of his age, even though in the end he mixed up his own interpretation with a different view, which had been advanced in the meantime by the Flemish astronomer Cornelius Gemma (1535-1578). Nevertheless, the short astrological discourse, or *giudicio*, that Giuntini composed on the topic and published in Venice in the immediate aftermath of the stunning astronomical sighting does present a few original elements, which are briefly examined and discussed in the present contribution. Giuntini’s *Discorso sopra la cometa apparsa nel mese di novembre 1572* fully belongs to the genre literature of vernacular prognostications on comets with prophetic overtones. As late as the end of the sixteenth century, this kind of literature was still in high demand among a wide range of readers and patrons, whose anxieties in this case were as deep as their fear of an impending threat from the sky. For us today the astrological *plaque* by Giuntini works like a prism of those fears, disquietudes and old beliefs, which were widespread among both laymen and the learned society of the Italian peninsula and France in the age of the Counter-reformation.

Keywords: Giuntini, Francesco; comet; historical astrology; meteorology; *stella nova*; SN1572.

1. Introduzione

La comparsa della novità celeste che noi oggi conosciamo come “la supernova di Tycho” (così nominata in onore dei primi studi sistematici al riguardo da parte dell’astronomo danese) fu un evento senza dubbio perturbante per

gli osservatori dell’epoca. Secondo lo storico americano Lynn Thorndike, l’esplosione della supernova costituì uno shock per l’Europa assai maggiore che le rivoluzionarie teorie di Copernico.¹ Se queste ultime infatti richiesero molto tempo per essere diffuse e comprese, nel caso della supernova invece la novità veniva a collocarsi davanti agli occhi di tutti in modo improvviso, eclatante e straordinario. Erano i cieli, per così dire, a palesare l’insostenibilità del modo in cui fino ad allora li si era intesi, a chiedere una revisione del modo con il quale li si era sempre guardati per mezzo di un “fuoco d’artificio” stellare che non poteva non essere notato da alcuno che anche solo per un momento avesse volto il proprio sguardo verso l’empireo. Moltissimi scritti fecero allora seguito all’apparizione, sia pubblicati a stampa che circolanti in forma manoscritta, attraverso l’intera Europa e non solo.² Tali contributi erano finalizzati a rendere ragione del fenomeno inatteso. I principali aspetti ad oggetto di controversia furono essenzialmente due: *che cosa fosse* e *che cosa significasse* quell’astro. Il secondo punto era generalmente percepito più urgente del primo anche se sul primo era fondato. Sebbene, cioè, fosse chiaro a tutti che il significato dell’astro dipendesse dalla sua natura e conformazione specifica, l’opinione comune era più preoccupata dalle eventuali ricadute che un tale fenomeno potesse avere per il corso della vita mondana sul breve e medio termine, a prescindere dalla precisa identificazione della novità celeste. Il mondo stava per finire? L’ira di Dio si stava abbattendo sugli uomini? Fu compito degli intellettuali del tempo quello di riportare la speculazione sul presunto significato dell’evento all’analisi delle caratteristiche visibili e osservabili della *nova*. Semplificando un poco i termini del dibattito, si potrebbe convenire nel riconoscere che il primo interrogativo – che cosa fosse – si riduceva all’alternativa “stella” o “cometa”, mentre il secondo – che cosa mai significasse – si riduceva all’annunciare cose buone o cattive, in alternativa. I due problemi erano percepiti come collegati fra loro anche perché, secondo il folklore e le antiche dicerie popolari, se si fosse trattato di una nuova stella non era detto che si preannunciassero tempi infausti, mentre se si fosse trattato di una cometa era pressoché certo che qualcosa di terribile stesse per accadere. Questi dubbi serpeggiavano in modo più o meno esplicito nelle ansie e nelle paure di chi sorprende la nuova luminaria nel cielo notturno. La generale incapacità di sciogliere queste perplessità con sicurezza era ulteriore causa di

apprensione, tanto nelle campagne e nei porti di mare, quanto nelle corti, nelle accademie e nelle aule universitarie. Tra gli esperti che si lanciarono in pieno dibattito nella risoluzione dell'enigma celeste vi fu Francesco Giuntini [Iunctinus o Junctinus] (1522-1590), letterato fiorentino, teologo carmelitano ed esperto astrologo (Fig. 1).³



Fig 1. Francesco Giuntini (1522-1590) sul frontespizio del suo *Speculum Astrologiae* (1573).

2. L'autore e le opere

Tra i suoi interessi e competenze si annoveravano anche la letteratura italiana⁴ e la storia locale⁵, oltre alla teologia⁶ e agli studi per la riforma del calendario⁷. Ma, al di là di questi suoi lavori, la reputazione professionale di Giuntini fu da sempre legata alla sua attività di astrologo praticante. Suo mentore fu Giuliano Ristori da Prato (1492-1556), padre provinciale dell'ordine Carmelitano e lettore di astrologia presso lo Studio medico di Pisa, del quale si conservano scritti di astronomia, astrologia, fisiognomica e chiromanzia, oltre a pronostici pseudonimi e geniture per committenti fiorentini di rilievo (tra cui l'oroscopo per Cosimo I de' Medici del 1537).⁸ Sia Ristori che Giuntini si occuparono a lungo del *Tetrabiblos* di Tolomeo, il primo adottandolo a libro di testo dei suoi corsi di lezioni, il secondo curandone una traduzione.⁹ Degno allievo di rinomato maestro, Giuntini si impraticò quindi nell'arte dell'astrologia predittiva, della corografia astrologica e dell'oroscopia natale o genetliaca. L'allievo fu ordinato sacerdote nel 1540 e nel 1551 conseguì il dottorato in teologia presso l'Università di Pisa. Seguirono alcuni anni di gravi sofferenze, di cui le fonti accennano vagamente in termini di malattia, disonori subiti, la sospensione *a divinis* e dallo stato sacerdotale, la

carcerazione, la tortura e la condanna all'abiura. Superata questa fase davvero infelice, Giuntini riguadagnò credito e fu eletto Provinciale del proprio Ordine il 18 novembre 1554 seguendo al Ristori nel magistero. I guai con l'Inquisizione e con "un gran principe" non dovettero tuttavia cessare per il Nostro, che nel 1561 si vide costretto a fuggire da Venezia in Francia, autoesiliandosi presso la nutrita comunità italiana di Lione per sottrarsi a nuove accuse nel frattempo occorse. Non ci sono del tutto chiari i capi di imputazione, ma non si può escludere che, più che a disamori politici, questi fossero da ascrivere alle sue iniziali simpatie per la Riforma e alle sue sospette pratiche di divinazione astrologica. Oltre a queste ragioni, un testimone come Antonio Possevino aggiungerà più tardi la pratica dell'usura e malversazioni economiche.¹⁰ A Lione dunque Giuntini trovò una nuova collocazione grazie ad alcuni suoi protettori. Prese lì servizio come teologo, monsignore elemosinaro e cappellano di palazzo per Francesco di Valois, duca di Alençon e fratello di Enrico III, futuro Re di Francia¹¹. Fino a quell'epoca Giuntini aveva pubblicato relativamente poco, ma la condizione in cui si trovava – di discredito e di esilio insieme – lo avrebbe presto costretto a difendere la sua reputazione e a dare sempre di più prova delle sue capacità di astrologo cattolico, peraltro da una posizione per lui certo non ideale ma comunque di relativa sicurezza, a distanza dai suoi persecutori.

A posteriori le opere di Giuntini ci restituiscono in effetti l'immagine di un astrologo impegnato ed estremamente attivo nel settore.¹² La sua attività pubblicistica trova inizio in pronostici generali, come quello per l'anno 1555¹³, o più specifici, ad esempio per centri urbani d'interesse, come quello del 1562 calcolato per la città di Lione.¹⁴ Quest'ultimo, in particolare, fu l'occasione di un'accesa disputa con il rinomato astrologo veronese Annibale Raimondo, che egli incontrò quando ancora a Venezia, presso la dimora dell'umanista Domenico Venier, alla presenza dell'astronomo della corte sabauda Giovanni Battista Benedetti.¹⁵ Giuntini avrebbe indirizzato all'astrologo polemistia una sua pubblica *Risposta al pronostico*.¹⁶ La disputa con Annibale Raimondo sarebbe stata destinata ad accompagnarlo, anche in contumacia, per tutta la vita.¹⁷ Il dibattito avrebbe toccato temi controversi quali la valenza dell'astrologia giudiziaria, la sua utilizzabilità nella pratica medica, l'interpretazione di fenomeni astronomici specifici, il primato di vecchie o nuove tavole astro-nomiche (*Alfonsine versus Pruteniche*).¹⁸

Nel 1570 Giuntini fece uscire un primo trattato latino sulle "rivoluzioni", o oroscopi calcolati su base annuale,¹⁹ e nel 1571 il "manifesto" di categoria intitolato *Discorso in difesa de buoni astrologi, contra quelli che biasmando non intendono tale scientia di astrologia*.²⁰ Entrambe le opere andranno a far parte – la seconda in versione latina²¹ – della sua opera maggiore, lo *Speculum Astrologiae*, di un paio d'anni più tardi.²² La *Defensio* verrà anche inclusa in una silloge del 1580, intitolata *De Divinatione quae fit per Astra*, insieme ai testi di altri autori in favore o contro l'astrologia, dove Giuntini sarà appunto collocato tra le voci degli apologeti dell'arte.²³ Il suo *Speculum Astrologiae*, dedicato a Caterina de' Medici e da subito oggetto di diversi compendi²⁴ e svariate

ristampe²⁵, è stato definito “*un de plus célèbres et le principal monument de l’Astrologie ancienne*”²⁶, nonché “*l’opera di astrologia pura più importante del XVI secolo*”.²⁷ Tali giudizi si contrappongono al parere del giovane Giovanni Antonio Magini, il quale nel corso di una più tarda polemica ne palesò il carattere compilativo-accumulativo che spesso sfociava nel plagio di molti autori medievali e contemporanei.²⁸ In effetti lo *Speculum* non è un’opera di ricerca e tradisce un’enciclopedismo non sistematico, più d’erudizione che di novità o riorganizzazione del materiale esistente.²⁹ Si tratta sostanzialmente di un corposo centone di astrologia teorica³⁰, che però non perde mai di vista l’importanza della messa in pratica della teoria per le finalità pratiche di cui l’astrologia viveva. Giuntini eredita e compendia gran parte della tradizione astrologica a lui precedente, ne difende il valore e la rilevanza, aggiungendo il proprio contributo ai diversi trattati che compongono il lavoro. In qualità di teologo cattolico Giuntini si muove con calcolata prudenza lungo il rischioso crinale dell’astrologia giudiziaria, distinguendola dalle illecite pratiche di divinazione e fuggendo qualsivoglia sospetto di implicazione deterministiche che l’arte potesse far sorgere nei suoi censori. Il suo principale intento rimaneva quello di mostrare la relativa capacità predittiva dell’astrologia in piena compatibilità con la dottrina del libero arbitrio. Ricordava pertanto i successi dell’astrologia che si tramandano dall’antichità romana, senza disdegnarne i moderni progressi matematico-astronomici nel frattempo ottenuti. La parte principale del lavoro è composta da due sezioni, il *Tractatus judicandi hominum natiuitates* e il *Tractatus judicandi revolutiones natiuitatum*. Il secondo, come detto, è una riproposizione dello studio sulle “rivoluzioni” astrologiche, mentre il primo affronta esaustivamente i principali principî astrologici dell’epoca, procedendo dagli aspetti più generali a quelli più particolari d’interesse. Vi si possono leggere inoltre una raccolta di aforismi a tema astrologico con tavole esplicative di accompagnamento, uno studio sulle eclissi, un trattato sui giorni critici, un calendario di nascite di persone celebri utile alla redazione degli oroscopi e i diversi studi di Giuntini sul *Tetrabiblos* – l’opera astrologica classica di riferimento. Due sezioni sono dedicate in particolare all’influenza degli astri sulle natiuità degli uomini, una per quanto riguarda le stelle fisse (il *Compendium de stellarum fixarum observationibus*) ed un’altra per quanto riguarda gli effetti astrologici delle comete (le *Annotationes in cometis, quas Mundus impunem vidit, ex observationibus veterum Astrologorum*). Da quest’ultima sezione una pubblicazione a sé sarebbe stata tratta a Lipsia nel 1580 come *Tractatio utilis et lectu digna de cometarum causis, effectibus, differentiis, et eorumdem proprietatibus*, nella quale viene delineata un’esaustiva tassonomia astrologica delle comete sulla base della loro caratteristiche osservabili.³¹ In quest’opera si ritenevano ancora le comete essere il risultato di esalazioni vaporose calde e non umide, ma vischiose e oleose, ascese dal sottosuolo alla regione elementare dell’aria, dove si sarebbero incendiate e sarebbero state quindi visibili da terra. Quanto ai loro colori, Giuntini li riferisce a quelli che associa ai pianeti: le comete gialle sono quelle “solari”, le rosse sono le

“marziali”, le scure sono quelle “saturnine”, le diafane sono quelle lunari, etc. Esse sono ulteriormente distinte in base alla loro forma, secondo una nomenclatura per l’epoca tradizionale (le *caudatae*, le *barbatae*, le *crinitae*, etc.)³², ciascuna delle quali ha un preciso significato astrologico in base alle congiunzioni o agli altri rapporti con i pianeti espressi in gradi. I significati attesi sono quasi sempre negativi e in generale derivano dall’alterazione climatica che la composizione comporta a terra e dalla conseguenze dell’alterazione climatica stessa per lo squilibrio degli umori degli uomini. Si deducono perciò preannunci di calamità eccezionali, o *portenta*, in base alle diverse combinazioni delle variabili in gioco, inclusi i segni zodiacali, e i loro effetti tanto nell’ambiente quanto negli ordinamenti e nelle istituzioni stabilite dagli uomini. All’interpretazione astrologica di stelle *novae* e/o fenomeni cometari particolari Giuntini dedicò diversi lavori. Innanzitutto, il *Discorso sopra quello che minaccia dovere avvenire la cometa apparsa l’anno 1572*, pubblicato a Roma nel 1573 sulla base di una prima versione francese, forse in forma epistolare, non pervenuta.³³ Ad oggetto di questo lavoro fu precisamente l’evento oggi noto agli astronomi come la “supernova di Tycho” (con la sigla SN1572). Lo scritto di Giuntini offre tra l’altro un’interpretazione profetica, a nome del matematico “Idnal”, contenente “*la dichiarazione del fuoco apparso l’ultimo dì de febbraio 1572 contro al turco, in fauore de’ Christiani*”.³⁴ Una diversa versione di quest’opera (senza la “dichiarazione” e con una nuova lista di comete storiche apparse tra il 1301 e il 1572) fu pubblicata a Venezia come *Discorso sopra la cometa apparsa nel mese di Novembre 1572*. Di quest’opera in particolare ci occuperemo nel presente studio (Fig. 2).³⁵ Alla (vera e propria) cometa del 1577 è invece dedicato il *Discorso sopra quello che minaccia avvenire la cometa apparsa questo anno*³⁶, anticipato dalla versione francese pubblicata lo stesso anno a Lione³⁷, Parigi³⁸ e Tolosa³⁹ e conservato anche in due versioni manoscritte in forma epistolare.⁴⁰

Oltre allo *Speculum Astrologiae*, le altre opere maggiori di Giuntini da dover qui almeno brevemente ricordare sono i *Commentaria alla Sfera* di Sacrobosco (1577)⁴¹, poi pubblicati anche in italiano (1582)⁴², e le effemeridi del 1585, redatte in revisione delle *Ephemerides novae et auctae* di Jean Stade.⁴³ Il commento a Sacrobosco sarebbe stato ripubblicato, insieme ad un commento alle *Theoricae Planetarium* di Peurbach, nell’edizione in due volumi del 1581 dello *Speculum Astrologiae*. Le effemeridi invece sono composte secondo gli assunti copernicani (“*secundum observationes Nicolai Copernici*”), come già lo erano quelle di Stade di circa trent’anni prima prese a riferimento critico e così le *Tabulae resolutae astronomicae* dello stesso Giuntini, anch’esse contenute nello *Speculum*.

3. Il *Discorso sopra la “cometa” apparsa nel mese di Novembre 1572*

L’opera è intitolata, in forma estesa, *Discorso sopra la cometa apparsa nel mese di Novembre 1572, (che pure ancora hoggi si vede in Lione, Parigi, ed altri luoghi) col*

nome delle terre che paiono più minacciate da queste maligne costellazioni.⁴⁴ Già dal titolo si possono evincere diverse informazioni. Innanzitutto che si tratta di un’opera stampata “a caldo”, quando ancora il fenomeno oggetto d’analisi era visibile in cielo (“pure ancora hoggi si vede”). Il tempismo, o per meglio dire, la tempestività della pubblicazione ne accresceva il valore agli occhi del lettore che desiderasse aggiornarsi in tempo reale. L’opera d’altra parte sembra nascere da una prima forma epistolare, come in risposta ad una domanda urgente del destinatario-committente. Dall’explicit della stampa apprendiamo che fu portata a termine il 28 Dicembre 1572, quindi poco più di un mese più tardi rispetto ai primi avvistamenti, in questo caso da città francesi. In secondo luogo, la novità astronomica osservabile in quell’occasione era da identificarsi, secondo l’autore, con una cometa. Sebbene la designazione di “cometa” avesse allora dei canoni di appartenenza piuttosto labili (per cui in generale qualsiasi fenomeno luminoso del cielo notturno vi potesse essere ascritto) l’autore non usa qui la parola “stella” o “nova”. All’inizio, quasi personificandola, Giuntini ne parla come di una cometa che ha esitato a mostrarsi pienamente e per l’imbarazzo di aver troppo indugiato ora non si voglia più palesare completamente con tutta la sua chioma o la sua coda, ma rimanga ormai così, “a guisa di stella”.⁴⁵



Fig. 2. Frontespizio dell’edizione italiana del *Discorso* sulla “cometa” del 1572 di Giuntini.

Parlare di “cometa” implicava nelle aspettative rinascimentali uno specifico immaginario di attese e di ricadute

nefaste.⁴⁶ Ciò è confermato, nel titolo, dalla specificazione che l’analisi proposta comprende anche la corografia, ovvero l’elenco delle zone che più sarebbero state “minacciate” dall’effetto negativo dell’imprevista apparizione. Fatti tragici di cronaca – la morte del re di Polonia Sigismondo II, l’assedio di diverse fortezze, diversi eserciti in rotta, il massacro degli Ugonotti – confermavano secondo Giuntini l’influenza negativa della cometa sul presente. Insieme alla conformazione celeste che la accompagnava, inoltre, sembrava non promettere alcunché di positivo per l’immediato futuro. Del resto, il lettore medio di un’opera di questo tipo – che potremmo già definire di pronosticazione post-cometaria⁴⁷ – sarebbe stato innanzitutto interessato a questo genere di informazioni: sapere, cioè, dell’eventualità che la sicurezza propria o del proprio ambiente fosse a rischio o meno. In tal senso il titolo aveva buon gioco nell’attirare l’attenzione dei caratteri più ansiosi e preoccupati. Il *Discorso* apparteneva quindi al genere letterario dei *giudicii* o pronosticazioni astrologiche, com’è chiaro dal contenuto e dalla struttura dello scritto, finalizzati all’allerta o avviso di previsione. Il *Discorso* anticipava di qualche mese lo *Speculum Astrologiae*, al quale nel frattempo Giuntini stava lavorando. Si può perciò intendere il primo come un caso di studio particolare, o *practica*, rispetto allo studio maggiore, anche se, come vedremo, non senza incongruità. Non mancavano peraltro lettori curiosi, e, diremmo oggi, superstiziosi per questo genere di stampe. Come ad esempio Giampaolo Giustiniano, gentiluomo genovese e informatore di Giuntini. Anche Giovanni Bonacorsi, camerlengo della Regina di Navarra (e presto di Francia) e dedicatario dello scritto, doveva evidentemente essere tra questi. Tra l’altro, tale dedica, e l’intermediazione conseguente, dovette avere un certo ruolo nell’ammissione di Giuntini alla corte del duca Francesco di Valois. L’effigie del frontespizio riporta il motto latino SATIS, “a sufficienza”, e raffigura un dromedario da soma, sovraccarico di peso, al quale vengono tolti i gravami in eccesso: probabilmente un’allusione alla bastevolezza e frugalità della vita parsimoniosa e umile della quale sarebbe stato capace l’autore, forse nella speranza di non costituire una grande spesa per il suo mecenate.

Giuntini non era l’unico a pubblicare uno scritto di questo genere e non mancavano avvisi in tutto simili al suo, nella penisola come altrove.⁴⁸ Annibale Raimondo, ad esempio, avrebbe pubblicato un suo trattatello sulla *nova* solo alcune settimane più tardi rispetto a Giuntini. Al contrario dell’astrologo fiorentino, Raimondo sosteneva che non si fosse trattato di una cometa, fosse anche essa senza coda, ma del riapparire di una stella già da prima esistente nella costellazione di Cassiopea. Questa divergenza di opinioni può essere letta come una ripresa a distanza della disputa tra i due e, più in generale, come riprova della varietà di pareri che proliferavano in merito al medesimo fenomeno. A cominciare dal dilemma cometa/stella, un dubbio assai comune all’epoca.⁴⁹ Negli stessi mesi in cui Giuntini stava scrivendo il suo discorso, ad esempio, la corrispondenza tra Guglielmo IV, Langravio di Hesse, e il duca Ludovico di Württemberg testimonia altrettanto bene la difficoltà di identificare propriamente la natura della nuova luminaria notturna.⁵⁰

Anche astrologi come Andreas Nolthius⁵¹ o Conrad Berg⁵² espressero l'idea per cui la novità celeste fosse quella di una cometa senza coda o "*stella secunda*". Altri osservatori dell'epoca, Georgius Buschius, Theodorus Graminaeus, e testimonianze raccolte in area tedesca da Johannes Praetensis riportavano si trattasse invece di una cometa.⁵³ Al di là della nomenclatura specifica,⁵⁴ la riconduzione ad un modello non era scelta facile perché in un caso comportava l'identificazione con un fenomeno meteorologico ordinario nella sfera sublunare, mentre nell'altro con un evento astronomico straordinario nella sfera sovralunare.⁵⁵ Inoltre, accordare la preferenza all'opzione "cometa" avrebbe significato non dare importanza al vivido scintillio, al moto diurno e alla considerevole distanza apparente dell'astro – elementi che invero facevano propendere per l'altra alternativa.⁵⁶ Circa il moto, già Plinio comunque segnalava che "*fra le comete, alcune si spostano come i pianeti* [erratum modo], *altre rimangono immobili* [inmobiles]".⁵⁷ L'opzione "stella", d'altra parte, avrebbe potuto trovare spazio solo al prezzo di un ripensamento radicale della filosofia naturale aristotelica e del principio di incorruttibilità celeste in particolare⁵⁸, che al tempo costituivano, rispettivamente, lo stato dell'arte in fatto di scienza e il principale ostacolo all'accettazione della *nova* come un evento eccezionale.⁵⁹ L'accettazione dell'evento come stra-ordinario, d'altra parte, avrebbe condotto l'osservatore a domandarsi se l'episodio si fosse realizzato in modo naturale, preternaturale o soprannaturale, senza dover escludere a priori, come fece ad esempio Clavio, l'eventualità di un episodio miracolistico o di un intervento divino.⁶⁰ Pertanto, il dibattito dell'epoca riguardo a ciò che anacronisticamente chiamiamo supernova può essere ricondotto al tentativo di inquadrare la novità come cometa oppure come stella. Va da sé che la preferenza, una volta accordata, avrebbe avuto implicazioni di largo raggio, dalle previsioni meteorologiche all'arrangiamento degli oroscopi, dalla metafisica all'escatologia. Dal punto di vista astrologico, inoltre, la scelta doveva risultare ancora più compromettente perché l'alternativa tra le due opzioni implicava conseguenze sia rispetto alla prossimità spaziale che alla vicinanza temporale degli effetti che ci si aspettava il fenomeno comportasse: più vicini e di maggior impatto nel caso di una cometa, più distanti e deboli nel caso di una stella.⁶¹ L'interpretazione si concentrava, come è il caso del lavoro di Giuntini, sull'interpretazione degli effetti infausti (quali, quanti e quando), più che sulla natura fisica dell'evento. Comune persuasione era comunque che si trattasse di un segno o di un avvertimento. Se davvero era un avvertimento, allora doveva essere un avvertimento inviato da Dio, ma *di che cosa* fosse segno e *rispetto a che rischio* non era chiaro. Qui entravano dunque in gioco gli astrologi, la cui affidabilità oscillava in genere tanto quanto il successo delle premonizioni di cui si facevano portavoce. Giuntini scrive precisamente "*per render qualche ragione del suo significato*" e questo è l'intento del suo lavoro di astrologo e di teologo insieme. I fenomeni naturali straordinari ("*oltre l'usanza e l'ordine della Natura*", scrive Giuntini)⁶², di per sé non sono né negativi né positivi: solo chi ne è competente può capire se siano benefici o invece costituiscano una

minaccia per il consorzio umano. Le comete, in particolare, non sono cause di ciò che avverrà, ma *segni* di ciò che potrebbe avvenire.

Anche dal punto di vista teologico, del resto, l'alternativa tra cometa o stella non era facile a sciogliersi. Che cosa significava questo avvenimento nella cronologia del Mondo e nella storia della Salvezza? Mentre nel primo caso l'archetipo rimaneva quello della cometa di Betlemme, l'araldo della Cristianità che guidò con successo i Magi al luogo della nascita del Messia, nel secondo caso invece essa richiamava la stella dell'Assenzio, l'astro dell'Apocalisse, ovvero uno degli eventi catastrofici che avrebbe preceduto la seconda venuta di Cristo e la fine del mondo terreno per come conosciuto. Per quanto foriere di efferatezze, apparizioni come queste restavano comunque opera di Dio e la loro comparsa non avveniva mai per caso né senza ragione. Teologi come Giuntini erano interessati al fenomeno anche per questi aspetti, che rimanevano più o meno sottotraccia nella lettura, giocoforza escatologica, degli avvenimenti astronomici. Lo studio del cosmo e delle sue corrispondenze intrinseche, la salute dell'uomo nel quadro dell'ordinamento della Creazione, la comprensione dei segni celesti in un orizzonte di speranza o dannazione: questi e altri motivi giustificavano una teologia astrologica o una astrologia cristiana quale quella che voleva propugnare Francesco Giuntini. Anche al di là degli avvertimenti e delle dissuasioni controriformistiche, a cominciare dalle Bolle papali di Sisto V e Urbano VIII.⁶³ Come ha scritto la storica statunitense Clarisse Doris Hellman, tra i primi interpreti ad essersi occupata di questi argomenti nell'ambito della storia della scienza, "la nuova stella del 1572 fu un fenomeno che presentò molti problemi simili a quelli posti dal passaggio di una cometa e che non per niente fu detta cometa da molti dei suoi osservatori. Molti di loro avevano potuto osservare delle comete in precedenza, molti altri lo avrebbero potuto fare a breve, osservando la molto dibattuta cometa del 1577. [...] I problemi astronomici posti dalla nova erano i problemi presentati anche dalle comete."⁶⁴

Giuntini edifica il suo discorso sulla base di un argomento *ex experientia*: poiché nella storia l'apparizione di una cometa ha sempre comportato gravi disgrazie per gli uomini non c'è motivo di credere che la presente faccia eccezione.

"d'ogni tempo si è osservato che le comete sono state ambasciatrici di carestia, peste, secchezza [*scil.* siccità], ardore [*scil.* irascibilità], rapine, ribellioni, fughe d'eserciti, guerre horribili, morte di Principi et infinite altre cose che negar non si può... perché non c'è ragione veruna che contra la 'sperienza vaglia un pelo... ragionevol non è il dubitare delle proprietà delle comete, cioè della malignità loro... è mai stata <del resto> alcuna cometa senza manifesta malignità e grave danno?"⁶⁵

La domanda è retorica e per Giuntini la risposta è ovviamente negativa. Per questo motivo è utile ripercorrere la storia delle osservazioni cometary in relazione agli effetti registrati in loro concomitanza. In questo Giuntini attinge a piene mani al genere, ormai popolarizzato, delle *historiae cometarum*, ovvero liste cronologiche di comete associate ad eventi epocali coevi per conferma retrospettiva di coincidenze più o meno significative.⁶⁶

Nella totalità dei casi si tratta di eclatanti fallacie di associazione, che scambiavano la pretestuosa correlazione tra avvenimenti disastrosi, dei quali in passato non vi era penuria (soprattutto a volerli trovare), per un rapporto di causa-effetto.⁶⁷ Ma per la verità pochi sembravano allora essere consapevoli del bias e Giuntini non fu tra questi. Nella sua analisi sceglie di concentrarsi su due diversi periodi, ovvero sui transiti cometari che furono avvistati dall'anno 1264 all'1439 e dal 1500 al presente. Unica eccezione è il ricordo della cometa del 570 d.C., osservata al tempo dell'imperatore Maurizio, che durò sei mesi e segnalò l'avvenuta nascita di Maometto e, per estensione, la nascita della religione islamica. Astrologicamente, uno dei più importanti annunci che può portare una cometa è appunto la nascita di un nuovo profeta o di una nuova religione (o confessione, o setta spirituale), come già accadde con la cometa di Betlemme.⁶⁸

All'argomento *ex experientia* si aggiunge anche un argomento *ab auctoritate*: gli studiosi della materia non hanno mai mostrato dubbi in materia, a cominciare dalla *Paraphrasi delle Meteore di Aristotele* di Giacomo Fabro, di cui Giuntini cita un breve stralcio a corroborare la teoria comunemente accettata.⁶⁹ A questo, in un'ideale lista di autorità di riferimento, Giuntini aggiunge i nomi di Tolomeo, Cicerone, Virgilio, Stazio, Lucano, Giovanni Damasceno, Leopoldo "astrologo Germano" (Leopoldo d'Austria), e Corrado Licostene, quest'ultimo autore di fortunati *Prodigi* che annoveravano le stelle-comete tra i "mostri" e i "portenti" più meravigliosi e innaturali (Fig. 3).⁷⁰ Oltre alla nascita di un nuovo profeta o di una nuova religione, molti sono i sorprendenti eventi nefasti che una cometa può annunciare agli uomini, o per meglio dire, che gli astrologi possono pronosticare a partire da una cometa. Giuntini attinge con grande dovizia di particolari alla tradizione per dare il suo vivido elenco, perché anche la presente sembra precorrere il male venturo.

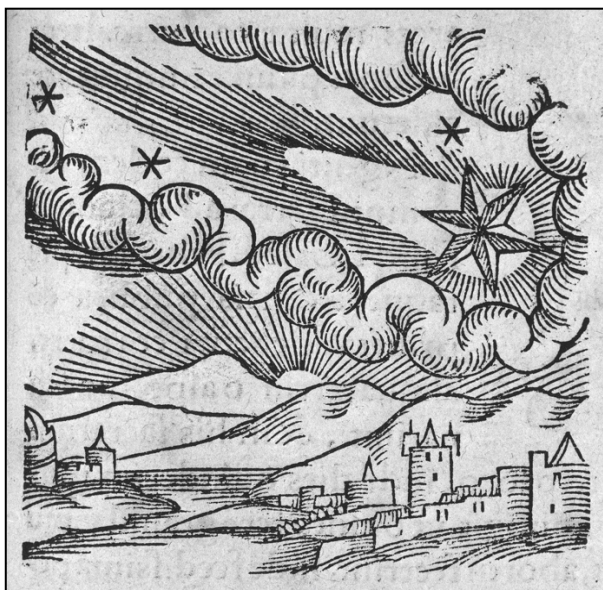


Fig. 3. I *Prodigi* di Konrad Lykosthenes, uno dei riferimenti di Giuntini per il *Discorso sulla "cometa" del 1572*

Per quanto riguarda la dinamica del fenomeno cometario Giuntini segue la tradizionale spiegazione, ormai diffusa

tanto a livello dotto che popolare, che affonda le sue radici nel primo libro della *Meteorologia* di Aristotele e nel *Tetrabiblos* tolemaico.⁷¹ Una tradizione interpretativa che peraltro arriva al tardo Rinascimento anche attraverso la mutazione della filosofia naturale stoica (principalmente il settimo libro delle *Naturales Quaestiones* di Seneca e la sezione sulle comete del secondo libro della *Naturalis Historia* di Plinio il Vecchio). Non a caso Giuntini cita Plinio al riguardo: "*si pascono di continuo le stelle dell'humore della terra*"⁷², riferendosi proprio all'idea che l'origine degli effluvi che innescano in cielo luci temporanee notturne (come appunto *novae* o comete) sia da individuarsi nei gas caldi, densi e secchi che si presumeva ascendessero dalle profondità della terra fino al concavo lunare. L'astrologo carmelitano ricorda come una volta raggiunta la sommità della regione elementare dell'aria queste esalazioni, a causa della frizione tra la sfera sublunare e sovralunare, si inneschino incendiandosi dando così origine a "stelle spaventevoli", nonché "crudeli segni" per chi le osserva.

Si mette in luce qui il passaggio, implicito in Giuntini, che sviluppa la tradizionale teoria della generazione delle comete in direzione di una *teoria della generazione degli effetti delle comete*.⁷³ Il punto di partenza resta la congettura peripatetica secondo la quale le esalazioni che si producono nel sottosuolo a causa delle incandescenze sotterranee ed ascendono al cielo a causa del loro calore generano sulla superficie della crosta terrestre un clima caldo e secco. Il movimento d'aria innesca innanzitutto dei venti, anch'essi caldi e secchi, e poi, non appena se ne condensa e incendia una quantità congrua, delle comete. Questo fenomeno comporta delle "novità", per usare il termine che usa Giuntini, cioè dei gravi effetti sull'ambiente, degli effetti sull'uomo e la società che vive in quell'ambiente, e degli effetti che derivano dalla concausa dei primi due. Il clima caldo e secco e i venti fortissimi suscitano una serie di calamità naturali a partire dalla siccità e dalla conseguente carestia. Seguono a terra "miserie" e poi "crudelissime e orribili piogge", allagamenti, alluvioni, diluvi, infestazioni di vario genere, epidemie, pestilenze. D'altra parte, l'inaspettata variazione climatica agisce sulle persone, alterandone le complessioni umorali ovvero gli equilibri fisiologici. Il calore desertico fa, letteralmente, ribollire il sangue nelle vene, provocando collere, ire, animosità, furori, smanie, aggressività e violenze difficilmente controllabili. L'alterazione climatica attacca soprattutto gli individui più suscettibili e delicati (come bambini, nobili o aristocratici dediti a vite molli) e, per estensione, alle associazioni di quegli individui, vale a dire alle istituzioni civili e alle varie forme del convivere organizzato (città, regni, stati). I re o i pontefici dunque sono le figure più esposte al rischio, vuoi per la loro costituzione inadatta al cambiamento, vuoi per trovarsi al vertice del disesto sociale che può conseguire. L'elenco degli effetti sull'uomo e sulla società dunque sono esponenziali e terribili: discordie, ribellioni, tumulti, sedizioni, guerre, assedi, distruzioni, carneficine, mutazioni di regni, morte di papi, diserzioni militari, incursioni di eserciti, sovvertimenti di potere, nuovi re ascendono al trono, nascono nuovi regni, si instaurano nuove dinastie, nuovi governi. La combinazione di disastri ambientali e disastri

sociali può dar corso ad un impoverimento complessivo che può sfociare in miserie, accuse, furti, razzie, “malizie”, minacce, iniquità, stragi, etc. La catena delle derive, anche quando non sembra seguire rigorosamente un filo logico, pare comunque inesorabile. Come scriveva Elide Casali, “attirando i maligni vapori terrestri, esse [le comete] eliminavano anche gli ‘umori cattivi’ dal mondo degli uomini causando la morte in guerra di principi spietati e di uomini crudeli e attraverso la fame e la carestia, quella dei peccatori che trascorrono tutta la loro vita ‘crapulando e lussuriando’”. La volta celeste fungeva da schermo sul quale venivano proiettate le angosce umane che nascevano dalla consapevolezza del peccato e dalla paura della punizione divina”.⁷⁴ L’elenco delle insidie è piuttosto colorito e mirava a spaventare il destinatario, che dunque si sentiva chiamato alla condiscendenza del suo estensore nella speranza che gli indicasse una possibile via d’uscita.

Venendo al caso particolare della “cometa” del 1572, Giuntini asserisce che essa fosse comparsa nella parte inferiore della costellazione dei Pesci. Ciò significa a suo avviso che vi saranno in particolare dissensi tra i vicini e gli affini. In altre parole si sarebbero preannunciati bisticci, liti, alterchi, divergenze, discordie, e gravi inimicizie, anche tra familiari e congiunti, la cui aumentata irascibilità non impiegherà molto perché gli attriti sociali si trasformino in battaglie. Giuntini basa il suo parere sulla sentenza degli astrologi Arabi, come Albumasar, il già citato Leopoldo “astrologo germano” e il rinomato Guido Bonaventura. Venendo dunque al pronostico, o giudizio, dell’evento in oggetto Giuntini annuncia povertà, prevaricazioni, la morte di qualche popolano, incendi, sovvertimento di governi (in particolare quelli Nord-africani) per ragioni di fede, accompagnate da prodigi stupefacenti. Le fonti arabe, inoltre, confermano a Giuntini che a giudicare dal colore chiaro della cometa non può che derivare fame e carestia. La lunga durata del fenomeno inoltre significa che l’effetto essiccante durerà a lungo e si manifesterà al suolo sottoforma di prolungata siccità. Tuttavia, l’ascrizione della stessa alla tipologia della “Rosa” sembra suggerire che l’esito sarà piuttosto morte di re e di potenti. La cometa appare a Giuntini sotto il dominio del Sole (e non quello di Giove come vorrebbero alcuni), dunque l’influenza negativa si eserciterà su ciò di cui il Sole è simbolo: forza, ricchezza, potere. Attenderà probabilmente alla vita di coloro che detengono il governo dei popoli e tempi migliori dovranno seguire: questo effetto si potrà verificare nel Regno di Polonia, che avrà un nuova casa reale e l’ordinamento politico del nuovo regno sarà migliore di prima (una probabile allusione all’imminente elezione di Enrico III di Valois al trono della Confederazione polacco-lituana). Il fatto che la cometa sia poi apparsa nel segno dei Pesci trova infine una singolare coincidenza con il profilo astrologico di Carlo IX, re di Francia, il quale pure aveva il medesimo segno nella propria natività. Secondo Giuntini questo significa un “garbuglio” della situazione religiosa sotto il suo regno (i postumi della strage degli Ugonotti?), ma prospetta anche prossime vittorie contro i nemici della cristianità.⁷⁵ L’allerta si estende a tutti coloro che avessero il segno dei Pesci nella propria natività: per la durata della

cometa Giuntini suggerisce a costoro di astenersi dai “congiungimenti carnali” e attendere con scrupolo ai propri possedimenti, potenzialmente a rischio. Il pronostico si conclude, come di consueto, con un’esortazione a pregare e sperare che l’Onnipotente protegga tutti e salvaguardi in particolare i devoti.

4. Il *Commento alla Sfera di Sacrobosco* e le *Annotationes in Cometis (Tractatio de Cometarum)* di Francesco Giuntini in merito alla *nova* del 1572

L’interpretazione comentaria di Giuntini avrebbe suscitato la reazione critica del suo storico antagonista, Annibale Raimondo, il quale sarebbe tornato a contraddirlo quello stesso anno nelle sue *Dichiarationi... contra quelli che hanno scritto che la stella delle meraviglie 1572... fusse cometa e non stella fissa*.⁷⁶ Sebbene la luminosità progressivamente decrescente avrebbe potuto far pensare ad una cometa, nota Raimondo, altre caratteristiche osservabili, come la durata, il momento dell’apparizione e l’assenza di una direzione non permettevano tale interpretazione. Non sembrava in ogni caso una cometa del tipo “Rosa”, come suggeriva Giuntini, perché né il colore né le caratteristiche corrispondevano (colore argenteo, aspetto di una rosa o di un volto umano). Inoltre, secondo le autorità astrologiche le comete appaiono ad undici segni zodiacali di distanza dal Sole, dunque se fosse stata una cometa sarebbe dovuta apparire in Leone o in Sagittario. Giuntini diceva fosse apparsa in Pesci, ma anche su questo punto veniva corretto dal Raimondo, che la localizzava con maggior precisione in Toro. Né Pesci, né Toro erano ad undici segni dal Sole, pertanto era astrologicamente impossibile che quanto osservato fosse una cometa.⁷⁷

La critica di Raimondo non rimarrà senza replica. L’ipotesi di una cometa nella costellazione dei Pesci sarebbe tornata ad essere oggetto d’analisi da parte di Giuntini⁷⁸ ancora nelle sue *Annotationes in cometis* del suo *Speculum Astrologiae*, poi ristampate come *Tractatio utilis et lectu digna de cometarum* di sette anni più tardi (Fig. 4).⁷⁹ Ci si attende anche da questi testi uno stato di pericolo e di minacce incombenti. Qualora infatti una cometa sia avvistata in corrispondenza della costellazione dei Pesci si prannuncia una cruenta guerra tra sovrani tra loro parenti, i quali si uccideranno a vicenda, lasciando i loro congiunti ed eredi pronti a vendicarli. I rispettivi regni si troveranno in una condizione di belligeranza e la sicurezza della popolazione sarà a repentaglio a causa dell’insorgere di ribellioni e rivolte interne. Non ci vorrà molto perché il dissidio si possa estendere anche a toccare questioni di fede e di religione, che sono ambiti per antonomasia turbati da eventuali transiti cometari, ricorda Giuntini, in passato come in tempi più recenti. La costellazione dei Pesci qualificherà queste sventure in particolare per i settori di propria influenza, ovvero la pesca e la navigazione, rendendo la prima poco produttiva e la seconda estremamente pericolosa.⁸⁰

Se l’apparire della cometa dovesse scorgersi verso Oriente allora questi effetti saranno più rapidi a realizzarsi, se invece dovesse scorgersi verso Occidente

saranno più lenti. Nel primo caso la situazione precipiterà con rancori, tumulti e lotte, dilapidazione del patrimonio del sovrano, amplificazione della paura e spreco di piogge nella stagione prevista per l'agricoltura. Nel secondo caso gli effetti saranno più estenuanti, potendo protrarsi fino a tre anni dall'apparizione. Pertanto anche in questo caso non mancherà un diffuso sentimento di angoscia tra gli uomini, dovuto in parte all'esondazioni di fiumi, e si registreranno decessi a diverse latitudini, specie nella parte occidentale del continente. Quantomeno la pesca non sarà così scarsa e buona sarà anche l'uccellazione.⁸¹ Giuntini, che cita in materia l'autorità dell'astrologo arabo Albumasar (Abu Ma'shar al-Balkhi), specifica che la parte più da tenere d'occhio della cometa è la coda: la direzione da cui viene, infatti, indica il luogo nel quale si verificheranno tempi di tribolazione ed epidemie pestilenziali.⁸²



Fig. 4. La nova in Cassiopea. Francesco Giuntini, *Speculum astrologiae*, vol. 1, Lyon: Beraud, 1581, f. 551.

Anche nella sezione dedicata all'“Ottava Sfera delle Stelle Fisse” del *Commento al Sacrobosco* del suo *Speculum* Giuntini ritorna sul fenomeno celeste del 1572. Come ha notato Pantin, la trattazione non è sempre congruente con quella del *Discorso*. Qui Giuntini si riferisce al fenomeno in termini di “sidus” o “nova” o “peregriana stella”. Addirittura parla della luce come di un “laetissimus radij fulgor”. Ricorda come si illuminò intorno alla metà del Novembre del 1572, superando in luminosità la magnitudine apparente di Giove, al quale pareva simile per figura e chiarezza (Fig. 5). Scrive infatti il Carmelitano:

La maggior parte degli osservatori di questi fenomeni ritiene che questa parvenza [*phasma*] non si trovasse nella regione elementare (che Aristotele assegna alla Cometa), ma nell'etere:

poiché non aveva assolutamente moto proprio, nessuna parallasse, brillava non meno della Lira [Vega], e senza incremento appariva da subito al massimo della sua luminosità, non effondeva chioma alcuna, e sarebbe durata molto più a lungo di qualsiasi altra cometa mai scorta, o quantomeno di cui si ha memoria, vale a dire sedici mesi, diminuendo gradualmente fino a scoparire. La luminosità stessa del fulgore era mirabile e superava infatti il resto delle stelle, sia Sirio che Procione che Giove, e certamente anche tutte le altre stelle fisse ed erranti, per lucentezza e dimensione, così da costituire un'anomalia nel cielo tale da sanzionare coloro che, come ciechi alla luce più abbagliante e pur avvisati dell'evento, pensavano che non fosse una novità. Da come appariva il colore della sua luce sembrava che per quanto riguardava la natura dell'astro fosse forse da rinvenirvi quella di Giove e del Sole e qualcosa anche dello stesso Marte, perché il suo era un raggio luminoso molto vivace, di un colore argenteo e quasi ardente.⁸³

Implicitamente Giuntini dà quindi una diversa interpretazione del fenomeno a qualche anno di distanza, forse condizionato dal *Commento al Sacrobosco* di Clavio, che a questo fenomeno aveva dedicato un approfondimento nel suo assai diffuso manuale⁸⁴, oppure più probabilmente sulla scia delle osservazioni dell'astronomo fiammingo Cornelio Gemma (1535-1578) nel frattempo pubblicate, che pure vengono compendiate in conclusione da Giuntini.⁸⁵ Doris Hellman ha poi avanzato l'ipotesi di un'altra fonte di Giuntini per quanto riguarda questa sezione individuandola nel *Commento alla Sfera* di Hermann Wilken (o Witekind), già allievo di Melantone e professore alla facoltà delle arti di Heidelberg,⁸⁶ anche se è più probabile che sia Witekind che Giuntini si ispirassero a Gemma. Giuntini sembra proprio seguire Gemma infatti nel mettere in guardia dalla pretesa di dare spiegazioni metafisiche a realtà naturali, anche qualora intese matematicamente.⁸⁷ Inoltre l'eccezionalità del prodigio celeste rende pressoché impossibile un'interpretazione standard di quelle che potrebbero esserne le possibili ricadute future. Come anche in questo caso già suggeriva Cornelio Gemma, sarebbe più prudente forse astenersi dall'esprimere un giudizio.⁸⁸ Giuntini termina quindi con un'ultima stoccata a Raimondo, il cui nome tuttavia non viene esplicitato:

Queste mie conclusioni le ho scritte assai volentieri per via di un certo astrologo italico, che diceva la stella essere una parvenza fittizia, e le scrissi in lingua italiana invece contro degli astrologi che sostenevano che questa stella non apparve mai in cielo né nella regione elementare dell'aria.⁸⁹

Si palesa così l'ispirazione polemica dell'interpretazione astrologica, sempre sottotraccia, tanto nel *Discorso* quanto nella digressione del *Commento a Sacrobosco* nello *Speculum*. L'astrologo italico al quale si riferisce è sicuramente Annibale Raimondo, che nel frattempo lo incalzava a mezzo stampa anche sull'interpretazione della cometa del 1577.⁹⁰ Pare, comunque, che la replica di Giuntini fu data per non lasciare cadere la provocazione e avere l'ultima parola nella disputa più che per rispondere punto per punto alle contestazioni di Raimondo. Tra gli altri astrologi non nominati ad oggetto di replica bisogna probabilmente annoverare Claudio Cornelio Frangipane, anch'egli autore di un breve trattato sulla stella del 1572.⁹¹

5. *Vir sapiens dominabitur astris?*

Il *Discorso astrologico sulla "cometa" del 1572* di Francesco Giuntini è un'opera strettamente astrologica, ma è anche un'opera che racconta l'esigenza di riaffermazione professionale di chi la scrisse. La *nova* del 1572 in questo contesto non diviene altro che un pretesto per mostrare le capacità dell'interprete e la portata dell'arte che padroneggia in un momento in cui l'autore aveva perso il proprio credito, era stato attaccato, e doveva quindi riguadagnare pubblicamente il proprio prestigio. In questo senso, ha ragione Isabelle Pantin a concludere che l'esigenza che muove il *Discorso* è essenzialmente politica⁹², tesa cioè a suscitare l'interesse ed al tempo stesso ingraziare i nuovi protettori francesi. Il pronostico che chiude la *plaque* giuntiniana è senz'altro leggibile in questo senso. Sebbene però lo scritto muova da un'esigenza contingente, propria delle dinamiche di mecenatismo ai quali gli esuli come Giuntini erano giocoforza costretti, la sua radice rimane quella di una *practica* astrologica. Lo scopo è quello di mostrare, senza modestia, ciò di cui Giuntini è capace, ovvero il suo *potere*. In altre parole, assistiamo all'autolegittimazione dell'astrologo di fronte al suo pubblico in occasione di un evento astronomico eccezionale. Come scriveva nel suo *Discorso in difesa de buoni astrologi contra quelli che biasmando non intendono tale scientia di astrologia*, vi sono degli uomini che sanno interpretare le stelle, perché vana sarebbe una potenza – la scienza astrologica – che non si individualizzasse in qualcuno in grado di saperne fare buon uso.⁹³ In questo senso, la successiva adozione delle tavole Pruteniche, basate sulle osservazioni di Copernico, in sostituzione delle Alfonsine, è da intendersi come una scelta in favore di una più precisa capacità predittiva in senso strettamente astrologico. Tale adozione infatti non comportò in alcun modo per Giuntini l'accoglienza dell'ipotesi eliocentrica copernicana. Non è corretto perciò affermare che Giuntini debba essere annoverato tra "forze di coloro che lottarono contro l'Aristotelismo", come sostenne Hellman,⁹⁴ perché se questo avvenne fu suo malgrado e comunque a posteriori, per via di citazioni antiaristoteliche (da Cornelio Gemma in particolare) incorporate nel suo *Speculum Astrologiae*. L'astrologia tradizionale, della quale il Carmelitano si faceva strenuo difensore, poteva del resto "funzionare" soltanto nel quadro di una cosmologia altrettanto tradizionale.

Si è molto insistito negli studi degli ultimi anni, e giustamente, su quanto le novità celesti apparse a cavallo tra sedicesimo e diciassettesimo secolo abbiano contribuito al sovvertimento del tradizionale impianto cosmologico. Il *Discorso* di Giuntini ci mostra però il rovescio della medaglia, perché davvero pochi furono i Brahe o gli Hájek del momento,⁹⁵ molti di più gli Annibale Raimondo o i Cornelio Frangipane. La maggior parte degli osservatori, cioè, continuò a propagandare quelle novità secondo i canoni tradizionali, che inevitabilmente finivano per condizionare la comprensione dei fenomeni più inaspettati entro schemi interpretativi lungamente consolidati. I popolari generi di stampe astrologiche o profetali in volgare continuarono per decenni a mantenere quantitativamente il primato sulle

trattatistiche geometrico-matematiche di argomento astronomico in latino.⁹⁶ La sfida a distanza con Raimondo si giocò in sostanza sul piano della reputazione professionale e la critica a tale velleità da parte di un Magini, che pure privatamente astrologizzava,⁹⁷ arriverà troppo in anticipo sui tempi.

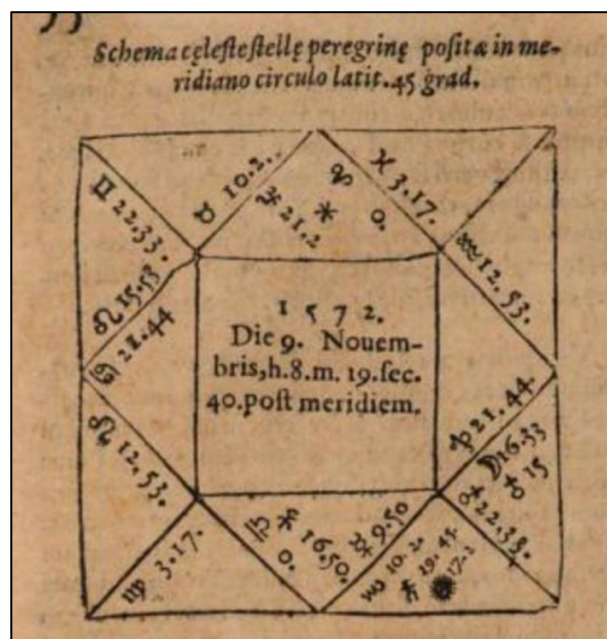


Fig. 5. Diagramma della "stella peregrina" in Cassiopea al momento della sua apparizione. Francesco Giuntini, *Speculum astrologiae*, vol. 1, Lyon: Beraud, 1581, f. 551.

Per concludere, bisognerà forse notare come per lo più si tende a leggere il diffuso motto tolemaico, "*vir sapiens dominabitur astris*", con il quale anche Giuntini corredeva i frontespizi delle sue opere, come se il soggetto fossero *le stelle*, come se cioè i corpi celesti esercitassero la loro influenza sul mondo e l'uomo si dovesse cautelare attraverso la faticosa comprensione delle loro configurazioni.⁹⁸ Il soggetto della sentenza tolemaica in realtà è il *vir sapiens* e nella fattispecie *l'astrologo*. È l'uomo, dunque, che si erge ad interprete dei sensi più remoti ed arcani della natura, nella presunzione che nelle profondità del cosmo vi sia un significato di interesse imminente e che egli, solo, lo possa comprendere. Questo era precisamente il sapere-potere che Giuntini e i molti come lui mettevano a disposizione dei propri mecenati e di cui davano prova ai propri suggestionabili lettori. La realizzazione o meno dell'effimero pronostico, peraltro, non era tanto importante quanto la sua enunciazione, che, al di là dell'improbabile successo, conferiva importanza a chi lo proferiva oltre ad una certa tremebonda soddisfazione in chi lo riceveva. Nel lungo termine l'apologia dell'astrologia cattolica propugnata da Giuntini non avrebbe avuto fortuna e si sarebbe anzi sempre più infranta contro le limitazioni imposte in materia dalla Controriforma, ma nel breve termine il *Discorso astrologico sulla "cometa" del 1572* sarebbe stato un successo (come provano le sue diverse stampe) capace di dare voce alle aspettative e alle inquietudini di uomini che facevano convivere il proprio libero arbitrio con la paura

per la cometa che non era cometa e le correlate profezie contro il Turco a nome del profeta “Idnal” – un altro dei sapienti espedienti del *vir sapiens* Giuntini.

Note

¹ Lynn Thorndike, *A History of Magic and Experimental Science*, vol. VI, *The Sixteenth Century*, New York: Columbia University Press, 1941, p. 68.

² Cf. Dario Tessicini, “Il dibattito italiano sulla nuova stella del 1572 (Con il testo del *Discorso intorno a la stella* di Giuseppe Valdagno, ms. Ambrosiana R 95 sup.)”, in Miguel A. Granada (ed.), *Novas y cometas entre 1572 y 1618: revolución cosmológica y renovación política y religiosa*, Barcelona, Universitat de Barcelona, 2012, pp. 43-93; Giordano Rodda, “Catastrofi nel cielo. I letterati del Cinquecento e i pronostici infausti”, *Griseldaonline*, vol. 20, n. 1, 2021, pp. 17-31, in partic. 19-20.

³ Cf. Germana Ernst, “Giuntini, Francesco”, in *Dizionario Biografico degli Italiani*, Roma: Treccani, 2001, t. 57, pp. 104-108.

⁴ Cf. Francesco Giuntini, *Discorso sopra il tempo dello innamoramento del Petrarca. Con la sposizione del sonetto, Già fiammeggiava l'amorosa stella*, In Lione [s.e.], 1580. Cf. P.D. Omodeo, “Fato, amore e astrologia: Uno scambio poetico tra Francesco Giuntini e Alfonso Cambi Importuni”, *Zeitschrift für Romanische Philologie*, vol. 127, 2011, pp. 360-366.

⁵ Cf. Francesco Giuntini, Postfazione “A’ Gentilhuomini Fiorentini” nella *Difesa della città di Firenze et de i fiorentini del concittadino Paolo Mini* (In Lione: appresso Filippo Tinghi, 1577); Id., curatela e postfazione (*Discorso sopra lo stato della magnifica città di Lione*) all’opera M. Iacopo Nardi, *Le historie della città di Fiorenza*, Lione, Theobaldo Ancelin, 1582.

⁶ Francesco Giuntini, *Predica nella quale si dimostra la realità della presentia del corpo di Giesu Christo nel Santissimo Sacramento dell’altare, con la confutatione dell’opinioni di Giouanni Caluino, di Pietro Vireto, di Theodoro Beza, & d’altri ministri sacramentari di Geneua: recitata à dì 14. di Gennaio nella Chiesa cathedrale di San Giouanni à Lione*, Lione, appresso Sisto Somasco, 1566.

⁷ Francesco Giuntini, *Synopsis de restitutione calendarii*, Lione, Philippum Tinghium, 1579; Idem, *Discours sur la reformation de l’an*, Lyon: Benoist Rigaud, 1582.

⁸ Renzo Baldini, “Giuliano Ristori (1492 - 1556)”, <http://www.renzobaldini.it/giuliano-ristori-1492-1556/#testo3> [Accesso: 7 Agosto 2023].

⁹ Traccia di questo lavoro sono le *Paraphrases, et annotationes in Claudii Ptolomaei et i Commentaria absolutissima in duos posteriores Quadripartiti Ptolomaei libro, innumeris observationibus referta* pubblicati nel suo *Speculum Astrologiae* (cf. oltre). Per il tradizionale rapporto di quest’opera con l’astrologia, cf. Silvia Fazzo, “Un’arte inconfutabile. La difesa dell’astrologia nella *Tetrabiblos* di Tolomeo”, *Rivista di Storia della Filosofia*, vol. 46, n. 2, 1991, pp. 213-244.

¹⁰ Cf. Antonio Possevino, *Bibliotheca Selecta*, Roma, Typographia Apostolica Vaticana, 1593, vol. II, libro XV, cap. 15, pp. 207. Cf. Louis Gabriel Michaud, *Biographie universelle ancienne et moderne, ou Histoire, par ordre alphabétique, de la vie publique et privée de tous les hommes qui se sont fait remarquer par leurs écrits, leurs actions, leurs talents, leurs vertus ou leurs crimes*, Paris, Vivès, 1856, p. 602: “dopo il suo arrivo in Francia, Giuntini risiede quasi sempre in questa città [Lione], e fu a lungo correttore di bozze per i Giunti. Si fece poi banchiere, e prestò denaro ad interesse. In questo modo riuscì ad accumulare sessanta mila scudi, che non furono rinvenuti alla sua morte. Aveva promesso mille scudi ai detti Giunti, ma non pervenne loro niente di questo dono d’amizizia”. *Ns. trad.*

¹¹ Cf. Francesco Giuntini, *Lettera per modo di difesa di m. Francesco Giuntini theologo, & elemosinario di monsignore serenissimo duca di Angio, Alenon, Turene, fratello vnico del re christianissimo*, [Lione] 1583 [1585]. Non è stato possibile consultare questo documento per la preparazione del presente studio.

¹² Cf. Giovanni Albassio, “Bibliografia di Francesco Giuntini”, *Schema. Rivista trimestrale di ricerca e documentazione dell’astrologia classica*, 1 (1986), pp. 151-161.

¹³ Francesco Giuntini, *Pronostico sopr’alle occorrenti costellazioni generali, & particolari dell’anno salutifero 1555. Calcolato per il r.p.m. Pacifico Giuntini fiorentino et theologo carmelitano. Con la mutatione del tempo di mese in mese*. In Roma, [Antonio Blado] 1555.

¹⁴ Francesco Giuntini, *Pronostico uniuersale & particolare dell’anno salutifero 1562, calcolato al meridiano della inclita città di Lione*. A Lyon, Jacques Faure [1561].

¹⁵ Raimondo, *Risposta alla sua secunda...*, cit., pp. 5-7. Cf. Gabriele Coradeschi, “Contro Aristotele e gli Aristotelici: Tycho Brahe e la *nova* del 1572 in Italia”, *Galilaana*, vol. 6, 2009, pp. 89-122, a p. 110. Su Benedetti, si veda Pietro Omodeo, “The Social Position and Intellectual Identity of the Renaissance Mathematician-Physicist Giovanni Battista Benedetti: A Case Study in the Socio-Political History of Mechanics”, in Rivka Feldhay, Jürgen Renn, Matthias Schemmel, Matteo Valleriani (eds), *Emergence and Expansion of Pre-Classical Mechanics*, Springer, Cham, 2019, pp. 181-213.

¹⁶ Gli scambi tra i due seguirono questa alternanza: (1) Francesco Giuntini, *Pronostico uniuersale & particolare dell’anno salutifero 1562, calcolato al meridiano della inclita città di Lione*, Lione, Jacques Faure, [1561]. (2) Nel 1562 Raimondo rispose a Giuntini, sebbene la risposta sembri non essere sopravvissuta; (3) [Francesco Giuntini], *Al magnifico m. Annibale Raimondo veronese. Risposta al suo pronostico dell’anno 1562. Fatta per m. Francesco Giuntini ... professore delle scienze mathematiche. Indirizzata all’Illustr. ... signor Francesco Maria Principe d’Urbino*, Lione [1562]; (4) Annibale Raimondo, *All’eccellentiss. M. Francesco Givntini dottore et matematico fiorentino. Risposta della sua secunda, [...] Indirizzata à tutti quelli che si degneranno di legerla*, s.l., s.e., 1564.

¹⁷ Cf. Coradeschi, “Contro Aristotele e gli Aristotelici: Tycho Brahe e la *nova* del 1572 in Italia”, cit., p. 111; Tessicini, “Il dibattito italiano sulla nuova stella del 1572”, cit., p. 64, n. 55. Isabelle Pantin, “Francesco Giuntini et les Nouveautés Célestes”, in Dario Tessicini - Patrick J. Boner (eds), *Celestial Novelties on the eve of the Scientific Revolution (1540-1630)*, Firenze, Olschki, 2013, pp. 85-104, a pp. 86-87.

¹⁸ *Ibid.*, p. 109.

¹⁹ Francesco Giuntini, *Tractatus Iudicandi Reuolutionum Natiuitatum. Omnia, quae pertractantur in hoc libro non Solum, Astrologis, sed etiam uniuersis bonarum, artium studiosis utilia, & iucunda; atque aliter explicata, quam hactenus fuerint ab aliis tradita*. [Lione], apud haeredes Jacobi Iunctae, 1570.

²⁰ Francesco Giuntini, *Discorso indiffesa [sic] de buoni astrologi, contra quelli che biasmando non intendono tale scienza di astrologia. Di m. Francesco Giuntini fiorentino, dottore theologo*. In Lione, s.e., 1571.

²¹ Come “*Defensio bonorum astrologorum de astrologia iudiciaria, aduersus calumniatores*” alle carte 1-10. Un traduzione di lavoro può essere letta in: Giorgio Damiano, “Un testo astrologico di Andrea Giuntini”, *Ricerca '90. Trimestrale di astrologia*, vol. 58, n. 2, 2004, pp. 13-41. Cf. Ornella Pompeo Faracovi, *Scritto negli astri: L’astrologia nella cultura dell’Occidente*, Milano, Marsilio, 1996, pp. 236 e 240.

²² Francesco Giuntini, *Speculum Astrologiae, Quod attinet ad Iudiciariam Rationem Natiuitatvm atque annuarum reuolutionum: cum nonnullis approbatis Astrologorum sententiis, ad publicam utilitatem studiosorum omnium aeditum*. Lione, Philippi Tinghi Florentini, Cum privilegio regio, excudebat Petrus Roussin, 1573.

²³ *De Diuinatione, quae fit per Astra, Diversum ac discrepans duorum catholicorum sacrae Theologiae Doctorum iudicium: scilicet Francisci Iunctini Florentini, ac Ioannis Lensaei Belliolani Professoris Louaniensis. Item Divi Thomae Aquinatis, Lucij Bellantij Senensis Physici, ac Marsilij Ficini Philosophi, de eadem diuinatione, sententia*. Coloniae, apud Ludouicum Alektorium, et haeredes Jacobi Soteris, 1580.

²⁴ Cf. ad es. il *Compendio sopra l’astrologia giudiciaria di Francesco Giuntini*, Napoli, Biblioteca nazionale Vittorio Emanuele III, Ms. XII.D.45, cc. 4r-48r.

²⁵ Sono note le successive edizioni o ristampe lionesi per gli anni 1575, 1581, 1582, 1583, 1623.

²⁶ Albert L. Caillet, *Manuel Bibliographique des Sciences Psychiques ou Occultes*, Paris, Dorbon, 1912, vol. 2, p. 347: “Cet ouvrage est un des plus célèbres et le principal monument de l’Astrologie ancienne. Nous n’insisterons pas sur la curiosité de ce fait que son auteur est un Docteur en théologie, et qu’il soumet son Œuvre de façon absolument explicite à ‘la Censure de la Sainte Eglise Cathlique Romaine’”.

²⁷ Leandro Cantamessa Arpinati, <http://www.biblioastrology.com/en/SchedeVisualizzer.aspx?NumeroScheda=3115> [23 Agosto 2023].

²⁸ Giovanni Antonio Magini, *Apologetica responsio. Ad Franciscum Iunctinum Florentinum theologum, mathematicum, atque elemosinarium ordinarium serenissimi principis Francisci Valesii ducis Andegauensis, Alenconii & c.*, Padova: apud Liuium Pasquatum [stampato anche presso Paulum Meietum lo stesso anno], 1584.

²⁹ “Sarebbe vano cercare, in questa vasta opera compilativa, una coerenza di tipo filosofico”. Pantin, “Francesco Giuntini et les Nouveautés Célestes”, cit., p. 103, *ns. trad.*

³⁰ Cf. Stefano Caroti, *L'astrologia in Italia*, Roma, Newton Compton, 1983, p. 14.

³¹ Francesco Giuntini, *Tractatio vtilis & lectu digna de cometarvm cavsis, effectibvs, differentiis, et eorumdem proprietatibus, cvm plana et expedita declaratione eventvum, quos diuersos pro diuersitate Planetarvm & Signorvm Zodiaci sortiuntur, tam ad communem vitae vsu necessaria, quàm ad natiuitatum figuras dextrè dijudi candas idonea, ex Francisci Iunctini Florentini voluminibus voluminibus excerpta*, Lipsia, Imprimebat Ioannes Steinman, 1580.

³² Cf. Umberto Dall’Olmo, “Latin Terminology Relating to Aurorae Comets, Meteors and Novae”, *Journal for the History of Astronomy*, vol. 11, 1980, pp. 10-27.

³³ Francesco Giuntini, *Discorso sopra quello che minaccia douere auenire la cometa apparsa l’anno 1572. del mese di nouembre. Insieme con i luoghi, e città più minacciate dalle sue maligne costellazioni. Tradotto di lingua francese in italiana. Aggiuntoui un’annotatione del mathematico ‘Idnal’, con la dichiarazione del fuoco apparso l’ultimo di de febraio 1572. contro al turco, in fauore de’ Christiani*. Roma, per Giouanni Osmarino Giliotto. [1573].

³⁴ Francesco Giuntini, *Discorso sopra quello che minaccia douere auenire la cometa apparsa l’anno 1572 del mese di nouembre. Insieme con i luoghi, e città più minacciate dalle sue maligne costellazioni. Tradotto di lingua francese in italiana. Aggiuntoui un’annotatione del mathematico ‘Idnal’, con la dichiarazione del fuoco apparso l’ultimo di de febraio 1572 contro al turco, in fauore de’ Christiani*. Roma, per Giouanni Osmarino Giliotto [1573].

³⁵ Francesco Giuntini, *Discorso sopra la cometa apparsa nel mese di Nouembre 1572 che (pur ancora hoggi si uede in Lione, Parigi, & altri luoghi) col nome delle Terre che paiono più minacciate da queste maligne constellazioni. Con la dichiarazione di tutte le comete apparse da l’anno 1301 al 1572. All’Eccellente Signor Giovanni Bonacorsi Maestro di casa della Serenissima Reina di Nauarra*. In Venetia, appresso Domenico Farri, 1573.

³⁶ Francesco Giuntini, *Discorso sopra quello che minaccia auenire la cometa apparsa questo anno 1577 alli 12 di nouembre. La quale si uede ancora di presente. Tradotta di francese in lengua toscana*. In Firenze, Marescotti, 1577.

³⁷ Francesco Giuntini, *Discovrs svr ce que menace devoir advenir la comete, apparüe à Lyon le 12. de ce mois de Novembre 1577, laquelle se voit encore à present*. A Lion, par François Didier, 1577.

³⁸ Francesco Giuntini, *Discovrs svr ce que menace devoir advenir la comete, apparüe à Lyon le 12. de ce mois de Novembre 1577, laquelle se voit encore à present*. A Paris, chez Geruais Mallot, rue S. Iaques à l’enseigne de l’Aigle d’or 1577. Iouxe la copie de Lyon.

³⁹ Francesco Giuntini, *Discovrs svr ce que menace devoir advenir la Comete apparue le xii. du mois de Nouembre 1577. Laquelle se voit encores à Lyon, et autres lieux*, Tolose, par Arnaud et Iaques Colomiés, imprimeurs iurez, 1577.

⁴⁰ Ms Ambrosiana R 95 Sup., 61-r-64v; Ms Bibl. Naz. “Vittorio Emanuele III”, Cod. I E 56, 19r-31r. Cf. C. Doris Hellman, “The Gradual Abandonment of the Aristotelian Universe: a Preliminary Note on Some Sidelights”, in *Mélanges Alexandre Koyré: publiés à l’occasion de son soixante-dixième anniversaire*, vol. 1: *L’aventure de la science*, Introduction de I. Bernard Cohen et René Taton, Paris, Hermann, 1964, pp. 283-293, a pp. 287-288 e nn.

⁴¹ Francesco Giuntini, *Commentaria in Sphaeram Ioannis de Sacro Bosco accuratissima. Omnia iudicio S.R. Ecclesiae submissa sunt*. Lione, apud Philippum Tinghium, 1577. La seconda parte fu pubblicata lo stesso anno, sempre a Lione dal medesimo editore: Id, *Commentaria in tertium et quartum capitulum Sphaerae Io. de Sacro Bosco*. Quest’opera fu il frutto maturo di studi preparatori pubblicati da Giuntini ad Anversa nel 1564, nel 1566 e nel 1573.

⁴² Francesco Giuntini, *La Sfera del Mondo, col testo di M. Giovanni Sacrobosco, Opera vtile & necessaria à poeti, historiografi, nauiganti, agricoltori, & ad ogni sorte di persone*. Lione, appresso Simforiano Beravd, 1582.

⁴³ Francesco Giuntini, *Ephemerides Ioannis Stadii Leonnoventensis, mathematici celeberrimi, Secundum Antuerpia longitudinem ex tabulis Prutenicis supputatae ab anno 1583, vsque ad annum 1606 vsque ad annum 1606. & ad S.D.N. Gregorij XIII. anni reformatione accuratissimè accomodata. Quibus schemata, & praedictiones annorum mundi & Eclipsium luminarium accesserunt, Auctore Francisco Iunctino Florentino Sacrae Theologiae Doctore*. Lione, in Off. Q. Philip. Tinghi Florent., apud Simphorianum Beraud et Stephanum Michaellem, 1585. Cf. Edoardo Proverbio, “Francesco Giuntini e l’utilizzo delle tavole

copernicane in Italia nel XVI secolo, in: Massimo Bucciantini and Maurizio Torrini (a c. di), *La diffusione del copernicanesimo in Italia: 1543-1610*, Firenze: Olschki, 1997, pp. 37-50; Grant McColley, “Francesco Giuntini and the Copernican hypothesis”, *Popular Astronomy*, n. 45, 1937, pp. 70-73.

⁴⁴ Una puntuale schedatura dell’opera può essere letta in Pierluigi Pizzamiglio, *L’astrologia in Italia all’epoca di Galileo Galilei, 1550-1650: rassegna storico-critica dei documenti librari custoditi nella Biblioteca Carlo Viganò*, Milano, Vita & Pensiero, 2004, pp. 64-65.

⁴⁵ “Si tratta di un trattato astrologico sul fenomeno del 1572 [il Discorso sopra la cometa apparsa nel mese di Novembre 1572 di Giuntini], che non distingue davvero tra una nova ed una cometa, né dà peso all’importanza delle osservazioni dell’astro condotte in quell’anno per la teoria astronomica.” Hellman, “The Gradual Abandonment of the Aristotelian Universe”, cit. p. 287.

⁴⁶ Cf. Matteo Cosci, “Aristotelian Cometary Theory in Italian: Effects of Comets from the Mid-Sixteenth-Century to Galileo Galilei”, *Rivista di Storia della Filosofia*, a. 2019, pp. 343-360.

⁴⁷ Elide Casali, *Le spie del cielo: oroscopi, lunari e almanacchi nell’Italia moderna*, Torino: Einaudi, 2003, pp. 93-101.

⁴⁸ Cf. Michael Weichenhan, “Ergo perit coelum...”. *Die Supernova des Jahres 1572 und die Überwindung der aristotelischen Kosmologie*, Stuttgart, Franz Steiner Verlag, 2004.

⁴⁹ “Questa preoccupazione interpretativa, in senso ampio, è tipica per questo periodo”. Charlotte Methuen, “‘This Comet or New Star’: Theology and the Interpretation of the Nova of 1572”, *Perspectives on Science*, vol. 5, n. 4, 1997, pp. 499-515, a p. 506 (ns. tard.).

⁵⁰ Methuen, “‘This Comet or New Star’”, cit.

⁵¹ Andreas Nolthius, *Observatio und Beschreibung des neuen Cometen, so umb das ende des 1572. und noch in diesem 73. Jar erschienen*, Erfurd, Zum bundten Lawen bey Sanct Paul [i.e. Mechler], 1573.

⁵² Conrad Berg, *Ἄζωμος cometa. Consideratio noui et insitati cometae, qui exortus Anno lesv Christi M.DLXXII. mensibus continuis quindecim ad Cassiopeae sidus conspectus est, Heroico carmine descripta per M. Conradvm Bergium Colbergensem Pomeranum, Vvitebergae, Iohan. Schvvertel excudebat*, 1574.

⁵³ Cf. Tycho Brahe, *De nova stella*, TBOO, I, 2 ff.

⁵⁴ Cf. Umberto Dall’Olmo, “Latin Terminology Relating to Aurorae Comets, Meteors and Novae”, cit.

⁵⁵ Per il ripresentarsi dello stesso dilemma per quanto riguarda la nova del 1604, si rimanda ora a Matteo Cosci, “The Correspondence of Clavius, Dal Monte, Magini and other Italian Astronomers on the Nova of 1604”, in Patrick J. Boner (ed.), *Kepler’s New Star (1604): Context and Controversy*, Leiden - Boston, Brill, pp. 204-258.

⁵⁶ Cf. Robert S. Westman, *The Copernican Question. Prognostication, Skepticism, and Celestial Order*, Berkley, Los Angeles, London: University of California Press, 2011, p. 232: “As a celestial entity, the nova was unlike a comet in that it did not appear to have any proper motion; but, like a comet, it was an unanticipated, transient occurrence that could be made to function as an event presaging future effects”.

⁵⁷ Plinio il Vecchio, *Naturalis Historia*, libro II, § 23.

⁵⁸ Cf. E. Grant, “Celestial Incorruptibility in Medieval Cosmology 1200-1687”, in S. Unguru (ed.), *Physics, Cosmology and Astronomy, 1300-1700: Tension and Accomodation*, Dordrecht, Springer, 1991, pp. 101-127; Id., *Planets, Stars, & Orbs. The Medieval Cosmos, 1200-1687*, Cambridge, Cambridge University Press, 1994, pp. 205 e ss.; Id., “Celestial Perfection from the Middle Ages to the Late Seventeenth Century”, in M.J. Olsen and P.L. Farber (eds), *Religion, Science and Worldview. Essays in honor of Richard S. Westfall*, Cambridge, Cambridge University Press, 1985, pp. 137-162.

⁵⁹ Al riguardo di questo punto chiave, si rimanda alla bibliografia indicata in: Ottavio Besomi e Michele Camerota, *Galileo e il Parnaso Tychonico, Un capitolo inedito del dibattito sulle comete tra finzione letteraria e trattazione scientifica*, Firenze, Olschki, 2000, pp. 32-33 e nn.

⁶⁰ Cf. Francesco Paolo de Ceglia, “Miracles”, in D. Jalobeanu and C. Wolfe (eds), *Encyclopedia of Early Modern Philosophy and the Science*, Cham, Springer, 2022, pp. 1367-1370; Lorraine Daston and Katherine Park, *Wonders and the Order of Nature, 1150-1750*, New York, Zone Books, 2001.

⁶¹ Cf. Giacomo Albano, *Comete, Nove e Supernove in Astrologia*, Morrisville (NC), Lulu Press, 2020.

⁶² Cf. Pantin, “Francesco Giuntini et les Nouveautés Célestes”, cit., p. 96: “Tenendo per acquisito che si trattasse di una cometa a Giuntini basta stupirsi della sua parvenza ‘a guisa d’una stella’ e di concedere che essa farebbe parte dei fenomeni che sono ‘oltre l’usanza e l’ordine della Natura’, senza precisare la portata di questa espressione. Dopo aver confermato le inquietudini che un tal prodigio deve far insorgere tramite

un catalogo di comete celebri, a partire da quella che aveva segnato la nascita di Maometto sotto il regno dell'imperatore Maurizio fino a quella del 1558 che aveva annunciato la morte di Enrico II. Infine, dopo un breve rapporto sull'atesi aristotelica circa l'origine delle comete, Giuntini fa dono del suo pronostico commisurandolo all'attualità politica del suo tempo.” *Ns. trad.*

⁶³ Cf. Elide Casali, “Astrologia ‘cristiana’ e nuova scienza. Pronostici astrologici sulle comete (1577-1618)”, in Dario Tessicini - Patrick J. Boner (eds), *Celestial Novelties on the eve of the Scientific Revolution (1540-1630)*, Firenze, Olschki, 2013, pp. 105-131; Ugo Baldini, “The Roman Inquisition’s Condemnation of Astrology: Antecedents, Reasons and Consequences”, in G. Fragnito (ed.), *Church, Censorship and Culture in Early Modern Italy*: Cambridge, Cambridge University Press, 2001, pp. 79-110.

⁶⁴ C. Doris Hellman, *The Comet of 1577: Its Place in the History of Astronomy*, New York: Columbia University Press, 1944 [AMS Press, 1971], p. 111: “the new star of 1572 [was] a phenomenon which presented many problems similar to those of a comet, and which was called a comet by many of its observers. Many of them had previously observed comets, many were to observe the important comet of 1577. [...] the astronomical problems presented by the nova [were] problems which also are presented by comets.”

⁶⁵ Giuntini, *Discorso*, cit., c. 1v-2r.

⁶⁶ Cf. Adam Mosley, “Past Portents Predict: Cometary *Historiae* and Catalogues in the Sixteenth and Seventeenth Centuries”, in Dario Tessicini - Patrick J. Boner (eds), *Celestial Novelties on the Eve of the Scientific Revolution 1540-1630*, Firenze, Olschki, 2013, pp. 2 - 32.

⁶⁷ Jane L. Jervis, “Comets as Omens and Agents of Change”, *Studies in History and Philosophy of Science*, vol. 39, n. 4, 1998, pp. 681-687, a p. 682: “There was no disagreement that comets meant something [...]. Fortunately, natural and political disasters have been frequent enough to give good empirical verification for these predictions”.

⁶⁸ Per il rapporto tra comete rinascimentali e confessionalizzazione, cf. Anna Jerratsch, *Der frühneuzeitliche Komendiskurs im Spiegel deutschsprachiger Flugschriften*, Franz Steiner Verlag, Stuttgart, 2020.

⁶⁹ Ivi, c. 1v.

⁷⁰ Conrad Lycosthenes [Conrad Wolffhart], *Prodigiorum ac ostentorum chronicon, quae praeter naturae ordinem, et in superioribus et his inferioribus mundi regionibus, ab exordio mundi usque ad haec nostra tempora acciderunt*, Basilea, H. Petri, 1557. Cf. Doris C. Hellman, “The Supernova of 1572 and the Comet of 1577 and the Alteration and Transmission of Ideas about Comets”, in *Actes du XIe Congrès international d’histoire des sciences*, vol. 3, 1968, pp. 24-30.

⁷¹ Sull’aristotelismo cometario di Giuntini, cf. in particolare Coradeschi, “Contro Aristotele e gli Aristotelici: Tycho Brahe e la nova del 1572 in Italia”, p. 112. Più in generale, cf. Hellmann, *The Comet of 1577*, cit., pp. 16-22; Jane L. Jervis, *Cometary Theory in Fifteenth-Century Europe*, Wrocław, Polish Academy of Sciences Press, 1985, pp. 11-13; Sara Schechner Genuth, *Comets, Popular Culture, and the Birth of Modern Cosmology*, Princeton, Princeton University Press, 1997, pp. 17-20; Tabitta van Nouhuys, *The Age of Two-Faced Janus: The Comets of 1577 and 1618 and the Decline of the Aristotelian World View in the Netherlands*, Leiden, Brill, 1998, pp. 44-46; Liba Taub, *Ancient Meteorology*, London, Routledge, 2003, pp. 77-115; Tofigh Heidarzadeh, *A History of Physical Theories of Comets, from Aristotle to Whipple*, Springer, New York 2009, pp. 1-19; Malcolm Wilson, *Structure and Method in Aristotle’s Meteorologica: A More Disorderly Nature*, Cambridge, Cambridge University Press, 2013, pp. 51-72 e pp. 117-145.

⁷² Plinio il Vecchio, *Naturalis Historia*, libro II, § 68. “quicquid [scil. exhalationes] exit [scil. ex profunditate telluris] in nubes ac sidera ipsa tot ac tantae magnitudinis pascens”

⁷³ Matteo Cosci, “Aristotelian Cometary Theory in Italian”, cit.

⁷⁴ Cf. Elide Casali, *Le spie del cielo: oroscopi, lunari e almanacchi nell’Italia moderna*, cit., p. 101.

⁷⁵ *Ibid.* p. 97. “Secondo il *Discorso sopra la cometa*, il fatto che la “cometa” del 1572 non avesse alcuna traiettoria <propria> avrebbe indicato semplicemente che non ci sarebbero state guerre civili al di fuori della Francia <da dove la stava osservando>. Di fatto, il generale carattere funesto delle previsioni di Giuntini risparmiava – curiosamente – la famiglia reale del paese che aveva accolto l’astrologo e che aveva conosciuto, quattro mesi prima, gli orrori di Saint-Barthélemy: il re Carlo IX doveva avere il sopravvento sui Protestanti arroccati nelle proprie roccaforti (allusione probabile all’assedio de la Rochelle, che si svolse tra il novembre del 1572 e il febbraio del 1573) e suo fratello Enrico voleva annunciare sotto buoni auspici la sua futura salita al trono di Polonia”. *Ns. trad.* Sulla strage della notte di San Bartolomeo, cf.

Stefano Tabacchi, *La strage di san Bartolomeo. Una notte di sangue a Parigi*, Roma: Salerno Editrice, 2018.

⁷⁶ *Dichiarationi de Anniballe [sic] Raimondo Veronese ridutte in forma di Risposte Contra quelli che hanno scritto che la Stella dalle Marauiglie. 1572. Novembre, & Decembre fusse Cometa, e non Stella Fissa. Indirizzate à gli amici della Verità.* [Venezia?] [Domenico Nicolini Da Sabbio?] [1573].

⁷⁷ *Ibidem*, f. B3r; Id., *Discorso*, cit., ff. B1v-B2r. Cf. Tessicini, “Il dibattito italiano sulla nuova stella del 1572”, cit., pp. 65-66.

⁷⁸ “Giuntini aveva un’alta considerazione dei propri scritti ed ebbe l’abitudine di riproporli più e più volte, sia a stampa che in forma manoscritta, e i suoi testi furono spesso tradotti e distribuiti da altri”. C. Doris Hellman, “The Gradual Abandonment of the Aristotelian Universe”, cit., p. 287, ns. trad.

⁷⁹ Francesco Giuntini, *Speculum Astrologiae*, cit., c. 320. = Id., *Tractatio utilis & lectu digna de cometarum causis, effectibus, differentiis, et eorundem proprietatibus*, cit., cc. 40-41, sezione: “*Piscium crinita cum suis portentis*”.

⁸⁰ *Ibidem*: “Si apparverit in signo Piscium aliqua ex stellis Cometis, significat, quod erit bellum maximum super affines, et interficient se invicem, et inimicitiae erunt in alteris, et areptio manus eorum ad obedientiam, decernitque plebis calamitatum statum, et contentiones fidei ac religionis causa, ex antiquorum traditionibus, unde varia oborientur in aere prodigia. Detrimentum patietur res piscaria, periculosissima erit navigatio, gliscet inter reges et potentes, eorumque affines bellum maximum, ut inter cives dissidium, cum multorum rebellione vafrum.”

⁸¹ *Ibidem*: “Si fuerit eius apparitio in partibus Orientis, erit velocius in hoc, quod significet et portendet inter reges, nobiles et populares, odia, tumultus, pugnas, regijsque census dilapidationem, cum timoris exaggeratione, et pluviarum suo tempore inutili descensu. Si vero fuerit in parte occidentali, erit tardius opus eius in hoc, quod significat: et erunt multae hominum angustiae, et mortes in pluribus climatibus, et praecipue in parte occidentis, et durabit annis tribus, et erunt aves multae et pisces, et inundatio fluminum.”

⁸² *Ibidem*: “Cum autem volueris scire partem, in qua veniet illud, quod stella Cometa significat, aspice caudam illius, in qua parte sit: quia in eadem parte erit, quod significaverit ex tribulatione atque pestilentia. Hora vero in operibus residuis, quae dicta sunt dixit Albumasar, erit quando Sol venerit ad signum, quod fuerit ex substantia eorum, quae dixi tibi, aut planeta, cuius natura est in opere, sicut natura eventus, qui apparverit tibi futurus in eodem anno septimo.”

⁸³ Francesco Giuntini, *Speculum Astrologiae*, vol. 1, f. 551: “Existimat plerique harum rerum contemplatores, non fuisse hoc phasma in regione elementari, quam Cometis assignat Aristoteles, sed in aetherea: eo quod nullum prorsus motum haberet proprium, nullam parallaxim, micaret non minus quam Lyra, et quod subito absque incremento apparverit maximum, nullum omnino spargeret crinem, duraretque longe diutius quam de ullo unquam Cometa compertum est, aut saltem memoriae proditum, nempe menses sexdecim, paulatim attenuatum disparsens. Fulgor eiusdem facis prae caeteris stellis admirandus superabat enim et Sirium & Procyona, & Iovem, omnesque caeteras procul dubio tum fixas, tum erraticas stellas splendore lucis ac magnitudine, ut prorsus toto aberraret caelo ac caecutire ad apertissimam lucem censeat eos, qui vel admoniti hanc non novam existimant esse. Videbat ex luci specie naturam pariter & Iovis, & Solis praeseferre, fortasse, nonnihil & ipsius Martis. Erat enim laetissimus radij fulgor, ex illo argenteo colore ac pene subrutilans.” *Ns. trad.*

⁸⁴ Sulla *digressio* di Clavio, cf. Ugo Baldini, *Legem impone subactis. Studi su filosofia e scienza dei gesuiti in Italia, 1540-1632*, Roma, Bulzoni, 1991, p. 155; James M. Lattis, *Between Copernicus and Galileo: Christoph Clavius and the Collapse of Ptolemaic Cosmology*, Chicago-London: University of Chicago Press, 1994, pp. 145-156 (note a pp. 250-252); Coradeschi, “Contro Aristotele e gli Aristotelici: Tycho Brahe e la nova del 1572 in Italia”, cit., pp. 95-96; Tessicini, “Il dibattito italiano sulla nuova stella del 1572”, cit., pp. 56-62; Pantin, “Francesco Giuntini e les Noveautés Célestes”, cit., pp. 95-96; Cosci, “The Correspondence of Clavius, Dal Monte, Magini”, cit., pp. 204-258, a pp. 220-224.

⁸⁵ Sul trattato di Gemma, si veda C. Doris Hellman, “The Gradual Abandonment of the Aristotelian Universe”, cit., p. 286 e n. 5; e soprattutto Dario Tessicini, “Cornelius Gemma and the New Star of 1572”, in Patrick J. Boner (ed), *Change and Continuity in Early Modern Cosmology*, Springer, Cham, 2011, pp. 51- 65.

⁸⁶ Herman Witekind (Wilken), *De Sphaera Mundi et Temporis Ratione apud Christianos*, Heidelberg, Harnisch, 1574, pp. 63-64. Cf. C. Doris Hellman, “Was Tycho Brahe as Influential as He Thought?”, *The British*

Journal for the History of Science, vol. 1, n. 4, 1963, pp. 295-324, a pp. 301-302; Ead., “The Gradual Abandonment of the Aristotelian Universe”, cit., pp. 290-291.

⁸⁷ Francesco Giuntini, *Speculum Astrologiae*, vol. 1, f. 551: “Si quis naturalibus volet aut mathematicis rebus causas metaphysicas coaptare: quod tamen quantum persaepe vanitatis obtineat, aliorum esto iudicium.”

⁸⁸ *Ibid.*, f. 552: “De Cometa [Claudius] Claudianus scripsit: ‘*Et nunquam caelo spectatum impune cometen*’. De hoc portento idem sentire non audeo: man et alia species, alia longe materies. Fortasse et causa efficiens proxima latet. Nec est quod adeo de procul futuris solliciti simus, cum ne videre contingat saepe quae ante pedes.”

⁸⁹ *Ibid.*, p. 551: “Haec scripsi libentissime propter quempiam Astrologum Italum, qui dixit hoc esse figmentum, & scripsi Italico sermone in contrarium contra Astrologos, dicentem, nunquam hanc stellam peregrinam apparuisse in caelo, nec in aëre”. *Ns. trad.*

⁹⁰ *Discorso d'Annibal Raimondo Veronese, Sopra la nobilissima cometa, che cominciò apparire il Nouembre 1577. non mai più veduta a ricordo dei viuenti in questa nostra Regione, vna tanto nobile, & con tanta lunga, & larga coda. Indrizzato alla Giustizia, alla Carità, all'Abbondanza, alla Sanità, & à tutti gli amanti del prossimo*. In Venetia [Gratioso Perchacino? Domenico Nicolini da Sabbio?] 1577.

⁹¹ Claudio Cornelio Frangipane, *Discorso sopra la stella, che è apparsa nell'anno MDLXXII in tramontana, doue discorrendosi di che ella sia composta, si dicchiara grandissimi effetti, che deue apportare*, Venezia [Domenico e Giovanni Battista Guerra], 1573

⁹² Pantin, “Francesco Giuntini et les Noveautés Célestes”, cit.

⁹³ Giuntini, *Speculum Astrologia*, vol. I, p. 2: “vana est illa potentia, quae non reducitur unquam ad aliquod opus, si non in tota specie, saltem in aliquo individuorum”.

⁹⁴ Hellman, “The Gradual Abandonment of the Aristotelian Universe”, cit., p. 293: “The tale of Giuntini just unfolded reveals that, for the original impact of the observations of the nova of 1572, those by Tycho Brahe were relatively unimportant, and hints at the vastness of the network by which ideas were being communicated [...] Giuntini’s writings in three languages, circulating in print and in manuscript, indicate the wide and varied audience to which almost simultaneously the old theories were being repeated and the new introduced. Yet Giuntini, himself influenced by others, was but one of many [e.g. Gemma], and by no means the most important one, who in a small area of thought added to the forces battering against Aristotelianism and played some part in the transition from the old astronomy to the new”.

⁹⁵ Su Hájek, cf. Matteo Cosci, “The *Dialexis* on the ‘new star’ by Tadeáš Hájek”, in D. McOmish and X. Wang (eds), *Supernovae, Comets, and Aristotelian Cosmology: a collapse of philosophical paradigms and the birth of the new sciences in the 16th and 17th centuries?*, Turnhout, Brepols, di prossima pubblicazione.

⁹⁶ Cf. Elide Casali, *Le spie del cielo: oroscopi, lunari e almanacchi nell'Italia moderna*, cit.; Ottavia Niccoli, *Profeti e popolo nell'Italia del Rinascimento*, Roma - Bari, Laterza, 1987.

⁹⁷ Con lo pseudonimo di Lodovico Bonhombra. Cf. Emmanuele A. Cicogna, *Delle iscrizioni veneziane*, Venezia, G. Piccotti, 1834, vol. IV, p. 456.

⁹⁸ Cf. Justin Niermeier-Dohoney, “*Sapiens Dominabitur Astris*: A Diachronic Survey of a Ubiquitous Astrological Phrase”, *Humanities*, vol. 10, n. 4, 2021, pp. 117-140.

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A Study of Philosophical Foundations of 2013 Islamic Education Curriculum in Indonesia

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Abstract: This article provides a thorough analysis of philosophical foundations for the 2013 Islamic Education (Pendidikan Agama Islam-PAI) curriculum in Indonesia. The analysis is carried out to examine and observe some philosophical foundations in the 2013 curriculum, discuss the significance of the philosophical foundations in the 2013 curriculum, and examine the philosophical foundations associated with PAI Curriculum. Comprehensive analysis is applied to various documents related to the 2013 Curriculum, the 2013 PAI Curriculum, and several relevant references. Furthermore, the results show that the philosophical foundations of the 2013 Curriculum are perennialism, essentialism, experimentalism, and social reconstructivism. They provide philosophical answers about educational goals, educators and students, educational content, and interaction processes. The philosophical foundation for the 2013 PAI curriculum automatically is the same as the 2013 curriculum, and it just needs to be adapted to the characteristics of PAI.

Keywords: Philosophical foundation, curriculum, Islamic Education (PAI).

1. Introduction

For over eight years since the implementation of the 2013 Curriculum, the discussion over the philosophical foundations of the Islamic Education (*Pendidikan Agama Islam-PAI*) Curriculum in Indonesia has always been crucial (Tolchah, Moch & Mu'ammara, 2019; Bashori et al., 2020; Husni, 2016; Suharto, 2018; Azra, 2018). A philosophical foundation is defined as a basic or a turning point based on the view of philosophy (Lackeus, 2016; Hodgson, 2020; Martin, 2017; Gialamas et al., 2016). Academically, philosophy is defined as the effort to describe and state a systematic and comprehensive view of nature and the position of humans (Syaodih, 2012).

The 2013 PAI curriculum is part of the 2013 Curriculum. Thus, the philosophical foundation of the 2013 PAI Curriculum is the same as the composing of the 2013 Curriculum. A philosophical foundation plays a pivotal role in composing a curriculum (Vinogradov, Andrey I. et al., 2016; Ornstein, Allan C. & et al, 2016; Brent, 2016). For that particular reason, this article analyses some philosophical foundations of the 2013 Curriculum, discusses the significance of a philosophical foundation within a curriculum and outlines the philosophical foundation for the 2013 PAI Curriculum.

2. A Philosophical Foundation of 2013 Curriculum

Based on the framework for the 2013 Curriculum in attachment 1 of the Government Regulation Number 59 Year 2014_a, which contains a philosophical foundation, it is stated that the 2013 Curriculum was developed through a combination of some philosophy, namely:

1) Local culture is the educational root that aims to develop the nation in the present and the future. The issue has caused the 2013 Curriculum to be developed based on the cultural diversity of Indonesia, aiming at developing the nation at present and developing the basis for a better future. Preparing the students' future has always been the concern of the curriculum, meaning that the curriculum is an educational plan for the life of the young generation. Thus, preparing for the future of this nation's youth is the primary duty of the curriculum. To prepare students' present and future, the 2013 Curriculum is currently developing learning experiences that provide students with a wide range of opportunities to master some essential competencies needed for their lives. At the same time, the curriculum is still aiming to develop the students' ability as the cultural heir and those concerning the problems currently faced by the nation.

2) The students are creative cultural heirs. Based on this philosophy, the nation's previous achievement in various activities has to be written in the curriculum for students to learn. Education is a process that provides an opportunity for students to develop their potential to reason and achieve outstanding academic performance. It is done by providing meaningful insight into what they have observed, listened to, read, and studied from the cultural heritage from the cultural perspective following the students' physical and psychological maturity. The 2013 Curriculum develops the students' ability to think rationally and brilliantly and positioning cultural excellence to be learned. It increases students' pride and applies it to their personal lives, social interaction, and cultural interaction.

3) Education develops intellectual intelligence and academic achievement through disciplinary education. This philosophy determines that the content of the curriculum is disciplinary education, and the learning process is the learning of disciplinary education (essentialism). This philosophy aims to develop the intellectual ability and academic achievement.

4) Education aims to develop the present and future better than the past. It is conducted by various intellectual, communications, social, awareness, and participation abilities of students to build a better life for the nation and the culture (experimentalism and social reconstructivism). Through this philosophy, the 2013 Curriculum aims to develop students' potential to think reflectively in solving social problems within society and build a better life for a democratic society.

Based on the philosophical foundations, none can specifically be applied to develop the curriculum, resulting in

highly qualified human resources (Maselena, Andino & et al, 2019; Embong, Rahimah & et al, 2017). Related to the educational philosophy, all of the four summaries of philosophical foundations of the 2013 Curriculum can be further analyzed. The first philosophical foundation stated that "The root of education is the local culture which aiming at developing the life of this nation both in the present and the future." The second philosophical foundation stated that "the students are creative cultural heirs." Both of these foundations are in line with the philosophy of perennials, one of philosophy which states that education should be returned to those controlling the medieval era, as it was the soul that has guided the human so that they understood the existence of the life which has rationally determined (Muhaimin, 2005).

Perennialism believes that there has been some long-lasting thought and is still relevant to the current situation since the idea was first established. Perennialism is an educational philosophy based on Neo-Thomism's philosophy (Muhaimin, 2005; Perks, 2018). It is a belief that appeared in the Catholic church of Italy and Germany in the mid-19th century, which follows the belief of Thomas Aquinas (Achmadi, 2001). Thomas Aquinas was a philosopher and theologian from the 13th century. His thought was implemented as a solid and trusted foundation as he was believed to balance rationality and belief. Thus, his teaching was studied in some secular European universities in the 13th century (Russel, 2004; Thompson, 2003; Muhaimin, 2005). Perennialism focuses more on immortality, idea, truth, and beauty than the cultural heritage and the social impact. Knowledge is considered far more important than what happens in everyday life. Any education based on this belief has emphasized absolute truth, universal truth regardless of time and space. If we pay close attention to its appearance, the belief was developed in European agrarian aristocratic society, which was more past-oriented. The education was based on humanity, personal formation, and mental characters using the expository and assimilation learning model (Syaodih, 2012).

In the third philosophy, it is mentioned that the 2013 Curriculum is based on essentialism. Essentialism believes in higher education values, which owns a proper position in the culture (Muhaimin, 2005). The philosophy expected humans to return to essential academic knowledge and character improvement. The essentialism developed within the industrial area in the United States of America; hence, science was a significant concern rather than humanity. The pragmatism was strong as the youth were prepared for the workforce directly after finishing their studies (Syaodih, 2012). Essentialism is similar to perennials in terms of their orientation toward the past. Education-based on perennialism and essentialism is categorized as classical education (Kooli, 2019; Ranjitkar, 2020).

In the fourth philosophical foundation, it is mentioned that experimentalism and social reconstructivism are the foundation of the 2013 Curriculum. Experimentalism is one of the philosophies that believed that finding the truth is through experiment and empirical facts. According to Latasha Holt (2020), experimentalism was John Dewey's contribution to the educational world. It is believed that

someone can acquire the knowledge through experiences-centered experiments; "*Dewey boldly identified experimentalism, which centered on human experiences, as the method in which an individual could grow with personal knowledge.*" In line with the spirit of experimentalism, the selected learning contents should stimulate students to perform experiments. The experiments will provide experience for the students, and it will become knowledge. Other writers argued that Dewey was developing a cognitive approach since its characteristics stress more on the cognitive aspects and the development of the aspects (Muhaimin, 2009). This statement indicates that the 2013 Curriculum has guided students toward creating through experimenting with obtaining the knowledge they need based on empirical evidence.

The following philosophical foundation for the 2013 curriculum is social reconstructivism. This belief aims to solve all of society's problems by an educated society. Syaodih (2012) claimed a social reconstructivism-based curriculum focused on society's problems. The model of this curriculum was based on the interactional education stream. It is an educational concept that focuses on the thought that humans are social beings, emphasizing two-sided interaction between teachers and students and vice versa (Syaodih, 2012).

Furthermore, education is not self-implemented; it is communal-implemented. Cooperation and interaction are needed to solve the nation's educational problems to achieve national education's goal. Thus, both parents and society have to get involved in the learning to become an indicator of fastening the social reconstruction curriculum. Those statements are the hidden agenda of the social reconstructivism philosophical foundation. Overall, the philosophical foundation of the 2013 Curriculum has shown the eclectic basis of perennialism, essentialism, experimentalism, and social reconstructivism.

3. The Significance of a Philosophical Foundation within Curriculum

The philosophical foundation in the curriculum becomes significant because philosophy provides philosophical answers to the goal of education, which the educators and students; what the content of education, and how the process of educational interaction (Syaodih, 2012). Education aims to achieve what it is dreamed of; the state sets its national education goals, as does Indonesia. According to the Law of the Republic of Indonesia No. 20 of 2003 concerning the National Education System, national education aims to develop students' potential. It is to become human beings who believe and fear God Almighty, have a noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens. That's the quality Indonesian people need, especially starting from the young generation.

Since national education goals are still philosophical and abstract and will take a long time to achieve, medium-term goals are needed, commonly known as institutional goals, and short-term goals are called instructional goals (Dakir, 2004). According to Abuddin Nata (2003), there is still a gap between the expected educational goals and

the reality of education graduates. It is essential to determine the goals of education and what should be taught in the educational process. The educational goals and content are then translated into the curriculum. According to E. Mulyasa (2005), the curriculum becomes a learning design that has a very strategic position in all learning activities and is a determinant of educational processes and outcomes. The curriculum design contains various teaching materials and learning experiences from the past, present, and future, designed and planned systematically by following applicable norms (Dakir, 2004).

The educator and students also require a philosophical answer because it is related to human nature and the surroundings. Associated with the question of how the process of educational interaction, philosophy can determine what strategy is used to lead to achieving the aspired goals.

Furthermore, it is necessary to discuss the significance of each of the philosophical foundations expressed or implied in the 2013 Curriculum Basic Framework. As discussed in the previous section, there are several philosophical foundations of the 2013 Curriculum, namely perennialism, essentialism, experimentalism, and social reconstructivism.

Perennialism is significant because this philosophical foundation provides a way out for education to focus more of its attention on an ideal culture that has been tested and tough. According to perennialism, the main task of philosophy is to find a clear goal (Jalaluddin & Abdullah, 2014).

Perennialism argues that the main task of education is to prepare students' intellectual maturity by providing knowledge (Jalaluddin & Abdullah, 2014). According to perennialism, it is necessary to provide knowledge of reading, writing, and arithmetic for the basic level, because this knowledge becomes the basis for obtaining other knowledge. Perennialism states that teachers play a pivotal role in developing students' potentials through the teaching process. Perennialism also influences the division of curricula for elementary, secondary, tertiary, and adult education to develop the students' potential (Jalaluddin & Abdullah, 2014).

The significance of the essentialism flow lies in the main emphasis in passing on culture to the next generation because the old culture has provided benefits for human life and has been tested in various conditions. So it is deemed necessary to make culture the basis for the knowledge and skills provided to students to become valuable members of society. The essentialism style refers to the philosophy of idealism and realism (Muhaimin, 2005; Amri, 2017). Idealism holds that it is impossible to obtain knowledge following reality because knowledge is mental or psychological (Bakhtiar, 2018). Realism argues that knowledge is declared accurate and appropriate under reality (Bakhtiar, 2018). Perennialism and essentialism include classical educational concepts. The classical education curriculum prioritizes educational content that comes from disciplines that experts have compiled without the participation of teachers and students. Teachers play a dominant role in determining content, methods, and evaluations in the classical education curriculum, while students passively receive teaching from the teacher (Syadiah, 2012).

As previously explained, experimentalism is a theory developed by John Dewey. John Dewey did not only hypothesize in developing his theory; he devoted all kinds of effort in his life to prove it. He published about 1000s works that include a lot of valuable information about each individual who learns through experiences throughout his life, and each individual needs life experiences to increase knowledge. Human life experiences contribute to decisions taken to deal with future situations. John Dewey's ideas about experimentalism provided a leadership norm for American thinkers and other activists from the Progressive era through the Great Depression in the United States (Holt, 2020). To research his beliefs, Dewey started his school in 1896 called the Dewey Laboratory School. The school was officially named the University Elementary School under his supervision. Dewey used schools as experimental laboratories to promote the study of teaching, learning, and administration, not as models for other educators and schools to imitate (Holt, 2020).

The significance of experimentalism lies in the legacy left by Dewey that learning is a process of experiential growth, always in a state of "becoming" and, if properly managed, increases but never reaches completeness or finality (Holt, 2020). The basic principles of experimentalism have a closer philosophical connection with the flow of pragmatism. The pragmatic concept is to influence the "here and now" and see life as an issue that matters right now, not as a problem that has judgments of the last days or some other metaphysical place. This statement is inseparable from Dewey's belief that "the individual moves from one situation to another, his world, and environment, expands or shrinks. A person does not find himself living in another world but in different parts or aspects of the same world (Holt, 2020). When associated with the curriculum, the curriculum by experimentalism is a curriculum by the era of the students. It is very contrast when associated with perennialism and essentialism, which tend to be classical education concepts that maintain inherited values.

The significance of the philosophical foundation of social reconstructivism can be seen through the main objectives of this curriculum. Syadiah (2012) mentioned that the primary goal of the social reconstructivism curriculum is to provide students with challenges, threats, obstacles, or disruptions faced by people (conflict theory). The point is how students are provided with real problems in society. Therefore, the curriculum prepared for students must provide sufficient knowledge about various pressing social problems and how to deal with these problems. Examples of problems related to the social reconstruction curriculum include human rights issues and oppressed community groups.

4. The Philosophical Foundation of the 2013 Islamic Education (PAI) Curriculum

PAI is classified as a general subject of group in 2013 Curriculum. Thus, the philosophical foundation of PAI follows the 2013 Curriculum described in the previous section of this article. The PAI curriculum's philosophical foundations are perennialism, essentialism, experimental-

ism, and social reconstructivism. By looking at the background of each philosophical foundation of the curriculum analyzed previously, it is necessary to adjust the philosophical basis to the PAI curriculum so that there is no conflict with the characteristics of the PAI curriculum.

Muhaimin's (2003) study related to the philosophy of Islamic education can be used as reference material for the philosophical foundation of the PAI curriculum by PAI educators. Muhaimin (2003) concluded that there are five typologies, namely: perennial-essentialist Salafi, perennial-essentialist Mazhabi, modernist, perennial-essentialist contextual-falsification, and social reconstruction. These typologies offer several blends of terms for the philosophical foundation of PAI.

Salafi-essentialist perennials are regressive and conservative in defending the values of the *Salaf* era, as well as having an Islamic education perspective that is oriented towards the Salafi era. The function of Islamic education is to preserve the values and culture of the *Salaf* era society (Muhaimin, 2003). Its characteristics are to answer educational problems in Salafi discourse through a textual understanding of the texts.

Perennial-essentialist *Mazhabi* is regressive and conservative in defending the values and thoughts of their predecessors because these values are considered established. The giving of *Syarh* and *Hasyiyah* marks its characteristics to the thoughts of the predecessors. The function of Islamic education is to preserve and maintain values, culture, and traditions that have existed for a long time (Muhaimin, 2003).

The modernist typology emphasizes free and open thinking but is still bound by the values contained in divine revelation, progressive and dynamic to the demands of the times. One of its characteristics is being tolerant when accepting opinions related to educational thoughts from anywhere and anyone. The function of Islamic education is to develop students' potential, potential interaction efforts with environmental demands, continuous reconstruction of experience (Muhaimin, 2003).

Perennial-essentialist contextual-falsification emphasizes regressive and conservative attitudes, especially in religious education. It accepts the concept of education, a less radical reconstructive attitude. Islamic education insight focuses on the continuity of Islamic education thinking responding to the development of science and technology and social change. The function of Islamic education is to develop the optimal potential of students and foster religious and human values in the development of science and social change (Muhaimin, 2003).

Social reconstruction emphasizes a progressive, dynamic, proactive and anticipatory attitude in dealing with science and technology developments, demands for change, and it is future-oriented. Social reconstruction is characterized by being opened-ended in the Islamic education system, and is responding quickly to current demands. The functions of Islamic education include fostering the creativity of students; enriching human cultural treasures; preparation of productive workforce (Muhaimin, 2003).

The philosophical foundation based on the philosophy of Islamic education above can be used as a guide for PAI educators in implementing the 2013 PAI curriculum. PAI

educators in schools and madrasah become curriculum developers directly in the classroom. Therefore, PAI educators must be equipped with an adequate understanding of the philosophical foundation. This understanding can be obtained in the college for teacher training before becoming an educator or participating in training after becoming an educator.

5. Conclusion

The philosophical foundations of the 2013 curriculum are combinations of several philosophical schools such as perennialism, essentialism, experimentalism and social reconstructivism. The significance of the philosophical foundation in the curriculum because philosophy provides philosophical answers to the main problems in education related to educational objectives; the educators and students; the content of education; and the process of educational interaction. Islamic Education subject (PAI) are included in the general subjects of group A in the 2013 curriculum structure. Therefore, the philosophical foundations of Islamic Education subject also follow the philosophical foundations of the 2013 curriculum.

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Through Irony to Realism: An Essay Review

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Abstract: This article aims to reconstruct the discourse of Ernesto Castro on speculative realism connecting it to the role of irony in the philosophical matter. Irony is shown to play an ambiguous role in the history of thought parting from the figure of Socrates and arriving to contemporary speculative philosophers. The differences between post-modern thought and realistic one in the way to treat irony are explicated. The author also makes an attempt to state the key points of the debates within speculative thought and to outline Castro's position in relation to them.

Keywords: Ernesto Castro, speculative realism, post-modernity, irony, metaphysics, universals.

Review of: Ernesto Castro, *Realismo poscontinental: ontología y epistemología para el siglo XXI* (Segovia: Materia Oscura, 2020).

After postmodernity

In what sense can we talk about realism today after the years of postmodernity and so called "linguistic turn"? Practically to answer this question Spanish philosopher Ernesto Castro has written a dissertation where nowadays Speculative Turn is analyzed as post-continental and as realistic.

The title post-continental is chosen not only due to the fact that there is no concordance among the representatives of the speculative turn about how to call themselves, as long as their projects have more differences than common, but also due to the own research interests of the author, one of whose first works "Against the Postmodern" is devoted to a critical look at the postmodern era. Indeed, without the optics of postmodern it is difficult to comprehend and reconstruct the role of modern philosophical currents emerging from it in one way or another.

"The normative advantage that postmodernism extracts from this situation of crisis and uncertainty consists in not taking a step back in the twilight of idols. Stay in the gap"¹. It is this in-between that is the litmus test of the postmodern era, which tends to treat symptoms rather than address the root of the problem. "We are the heirs - whether we like it or not - of that gesture of submission that marked the era"². The state of stalemate and the end of metaphysics, a dead end generated by the phantasms of the Enlightenment, in which postmodernism is bogged down, struggling with imaginary enemies and suffering defeat. Indicative in this context appears "hauntology", that has become a full-fledged philosophical movement, the main conceptual characters of which are ghosts/spectres. Neither alive nor

dead, they are in no hurry to leave, but obsessively return. Ends that do not end, a past that intrudes into the present because of the insufficiency of the work of sorrow. If the spectres of Jacques Derrida are sovereignly present in their absence, the spectres of Quentin Meillassoux receive a temporary indulgence by divine non-existence.

The way out of the impasse of postmodernity cannot be done directly, simply by saying "we will not do this, we will do it differently". One way or another, it is necessary to continue the tradition, not to result anachronists.

Oscillation

In metamodern exists such a concept as oscillation. It means fluctuation between several traditions at the same time, for example, between modern and postmodern. In modernity, reality is still cognizable, while in postmodernity it is no longer. Addressing the language of Jean Baudrillard – subject does not have instruments to distinguish copies from originals. We have access only to simulacra that have become "detached" from the originals, calling the latter into question. Oscillation makes it possible to unite the seriousness of the modern and the non-seriousness of the postmodern. Post-continental realism also fluctuates: between continental and analytical, academicism and popularization. When Meillassoux formulates the problem of correlationism, the next step he takes is to overcome correlationism from within, by its own methods. This is an ironic overcoming of correlation, which ultimately makes it possible to speak about the Great Outdoors. According to Gilles Deleuze's definition³, if irony is the art of depth and height, then humor is the art of the surface. So, G. Harman prefers humor, which corresponds to his method of overcoming correlationism - not from the inside, but by extending the correlation to the relationship between all objects. Criticism through the creation of distance, for Harman, must recede in favour of a closer contact with things⁴, accordingly, irony must give way to humor, which does not rise above things, but glides over them. Both irony and humor are nevertheless united by the fact that they allow you to talk about things without exhausting them.

The irony of history

In the history of philosophy, one of the first ironists was Socrates, a figure that opposed himself to common sense through an ironic attitude. The posture of common sense or the pre-ironic position consists in non-reflexive, non-critical adherence to practical and theoretical guidelines,

habitual frames of action and thought. The pre-ironic position is characterized by naivety, that is, a certain inability to look at oneself from the outside. Socrates for Greek society was a form of ironic self-awareness - taking the position of the unknowing, he called the inhabitants of the polis to a dialogue and provided an opportunity to express their position, so that through leading questions and the procedure of maieutics, they could test their opinion for strength and coherence. As a rule, everything ended with the opponent's position being revealed as self-contradictory, not coinciding with itself. Controversy is an invariable component of the ironic operation - what seemed to be one turns into another. Another important component of irony is temporality - irony is revealed after the fact happened, and that makes it related to the way Shelling understands history, which is in the making and is perceived as necessary only after it has happened⁵. The ironic attitude of Socrates allowed him to keep a distance between truth as an absolute, to which thought aspires, and its final incarnation. Thus, truth and thought were affirmed as processual and not reducible to the steps through which they unfold.

Nevertheless, it is not so easy to maintain balance here, it requires the agility of a rope-walker, so that when philosophizing with a hammer, not to be buried under one's own philosophizing. Thus, in the history of irony, outlined by Søren Kierkegaard⁶, its positive and negative aspects were revealed. If irony is restrained, it ennobles thought and life, frees them from the fetters of rigidity. But if there is «too much» irony, then it becomes a nihilistic force, a force of negation and a herald of despair. Irony can move forward, revising obsolete concepts and schemes, or vice versa, limit and become a cage.

The nihilistic potential of irony is disclosed in the form of an enlightened false (or unfortunate) consciousness, revealed by Peter Sloterdijk⁷, whose main character is a cynic, that is, a person who knows what is right, but does the opposite. In the case of the cynic, irony is not productive, but reinforces the gap between action and knowledge, as well as between an individual and social whole.

The position of the cynic is adjacent to the position of the liberal ironist, described by Richard Rorty⁸. For Rorty, a pre-ironist is someone who unconsciously describes the world in terms of a finite vocabulary and is unable to go beyond it; alternative dictionaries are comprehended by the pre-ironicist in terms of his final vocabulary. The ironist, on the other hand, remains in the state of unrootedness because he can move between vocabularies and does not think that one can be closer to reality than others, the choice of the vocabulary is guided by convenience. This makes him relativist, since vocabularies are equal in their inability to correspond to the state of affairs, they are equally conditioned by the contingency of the language, and the existence of a meta-vocabulary is impossible. He is sceptic since there can be no criteria to prefer one vocabulary to another, everything can be redescribed and justified by this redescription. He is nominalist as long as for Rorty nominalism means sanity.

The position of the ironist is opposed not only to the position of the pre-ironist, but also to the position of the metaphysician. The typical strategy of metaphysician is very similar to the conceptualization of the philosophical method criticized by non-philosophy of François Laruelle⁹

- thus, the metaphysician operates by revealing contradictions between two positions, which the theory proposed by the metaphysician removes or resolves. Metaphysical theories are denounced as pragmatic solutions that produce temporal limited vocabularies rather than reveal reality (still the idea of productive nature of thought does not deny its realistic dimension - as we see in Iain Hamilton Grant¹⁰, for example). Hegel, according to Rorty, opened the era of continental, ironic philosophy, which is driven not by the desire for truth, but by constant self-renewal, the renewal of vocabularies. This renewal does not have rational limits, it reminds hermeneutic circle. But if the world can't be totalized in a meta-vocabulary does this mean we can't have access to it? So, for Meillassoux as well as for his teacher Alain Badiou the world as totality does not exist as long as a part has more reality than the whole - principle derived from the set theorem of Cantor according to which each set is less potent than the set of its subsets. More or less, affirm non-existence of the world as all-encompassing unity is a general tendency within speculative thought.

The concept of vocabulary, in our opinion, might be compared to the concept of Markus Gabriel's fields of sense or the concept of Castro's *generos*. All three figures are united by epistemological pluralism, with the essential difference that Rorty is closer to nominalism and textualism, insofar as he resorts to strong linguistic analogies and deprives vocabulary of access to reality. While Gabriel and Castro are closer to realistic naturalism, insofar as fields and *generos* are not reducible to sign systems or language games and within them hard facts do exist.

Here, the card being played is historicity, or rather, how we understand the mutability of forms - from the duality of creation/discovery, a pragmatic conclusion about the utilitarian nature of knowledge does not necessarily follow. In the conditions of temporality, finitude and contingency of vocabularies does not exist a sort of continuity between them? Otherwise, the translation won't be possible. Let's remember the example of Don Quixote made by Gabriel - an object Don Quixote created by Miguel de Servantes plays the role of directing sample, directing sense which unifies the versions of Don Quixote of Avellanda and Pierre Menard but does not determine them completely. Example that suggests Castro is one of the significances of the Left: The Left in Spain in 2021, the Left of Pablo Iglesias Primero and the Left of Pablo Iglesias Secundo. Despite the fact that the significances are obviously different there is a concrete historical/accidental continuity between them as one between father and son in Aristotle. These examples may help us to get a different look on how Rorty treats figure of Rene Descartes - as a creator of completely new philosophical vocabulary, who has broken up with previous ones. The continuity, affirms Rorty, is constructed by philosophical society in an artificial way. Nevertheless, the language of Descartes was developing in the tension and conflict with his Jesuit background - so rupture goes alongside with succession.

The position of the liberal ironist and philosophy as art seems to give ambivalent results - by removing the pretensions of mind from metaphysical areas, does not happen exactly what Meillassoux warns against? Philosophy becomes a private matter, as Rorty expressly affirms, and by withdrawing itself from public debate, turns into a form of

escapism. If philosophy does not get involved in the formulation of metaphysical statements, metaphysical statements will not disappear, they will continue to be formulated by other public institutions – metaphysical questions will simply be outsourced.

The undermining and revision of the contents of collective consciousness are also carried out in the project of Ray Brassier, who continues the projects of eliminative materialism of Paul Churchland, Wilfrid Sellars and Robert Brandom, but does it with amendments taken from non-philosophy. On the similitude between Rorty's and Brassier's projects points Artem Morozov suggesting that contradiction between «inventing» eliminativism of the first and «revealing» eliminativism of the second could be removed – if eliminativism becomes an «every day» practice, then Descartes and his contemporaries will retrospectively get rid of Cartesian subjectivity¹¹. One more time we confront the idea of re-description of history and not surprisingly as well as Rorty Brassier pays tribute to the Hegelian concept of history as a series of errors that are discovered as such only after happened, but are necessary to free subject from the myths of the given. Philosophy works in this historical gap of demystification, in which the thing in the process of self-differentiation reveals itself. Thing can reveal itself because though concepts depend on subject, objects do not, as long as the relation between being and thought is conceptual¹². Brassier writes that the classic gesture of correlationism is to reduce epistemological difference between rational/sensual and to reduce metaphysical difference between things/concepts – seems that which Rorty does. There is a delicate moment that concerns the nature of these differences – identity and difference within concept do not found identity and difference within object. The recognition of non-equivalence between concept of difference and conceptual difference is the base for transcendental realism.

For all postmodernity, Rorty subtly understood and expressed the difficulties that fall on the shoulders of any philosopher who faces the task of finding his language and his Self through the re-description of the previous tradition. Irony plays a key role in this process, allowing not to be identified with the discourse of the Other, but to maintain a backlash. So, for Castro himself, irony becomes an important tool for distancing both from postmodernism and from the post-continental, which he by renaming with the prefix “post” collocates within tradition showing that realists still have a lot to do in order to ensure that their projects meet their stated goals. And it's not only about the contradictions between them or voluntaristic interpretation of philosophers of the past, but about the internal contradictions of each.

Realism?

The book of Castro is structured as a sort of graph where as starting point we have classic definition of what is it this realism about which we are talking about. Because you can name yourself in whatever way you want, but in order to talk not about arbitrary philosophical decision it is necessary to start from a certain criterion. So, realism is defined as a position according to which “exists a reality

independent of us, which can be known in some way”¹³. Respectively, as the enemies of realism are outlined nominalism, skepticism and idealism that are opposed to the propositions of existence, knowability and independence. Since Castro has had a certain formation in scholastic philosophy realistic debates are reconstructed starting from categories of Aristotle and the question raised by Boethius's commentary on Porphyry's introduction to them about universality of genera e species (in this perspective kenotypes of Meillassoux and traces of Maurizio Ferraris are shown as the resolution of the question of universals). The problem of universals will further migrate and transform into the problem of substantiating the reality of the external world and will have a turning resolution in Kantian antinomies that open the epoch of the image of the world and give birth to continental philosophy. Thus, Ferraris as well as Meillassoux and Grant assess negatively the Copernican turn, all for different reasons and offering different alternatives.

So, in the work “Good Bye, Kant”, Ferraris accuses Kant of mixing ontology and epistemology with the resulting relativism, subjectivism and constructivism. However, to say that Kant's existence coincides with representation would be a mistake, and the constructive abilities of the transcendental subject are limited by the causality of the thing-in-itself – argues Castro. Ferraris formulates the criterion that distinguishes reality from appearance as “*unamendability*” and bases it on naive physics such as visual experiments of observing the sun. The reality of the Great Outside is substantiated through this kind of aesthetic experimentation¹⁴. However, Ferraris himself confuses ontology and epistemology, for example, mixing experience with culture, in particular with myths, an operation that renders experience subjective and corresponding more to the inner world than to the outer one.

According to Meillassoux, Kant gave birth to correlationism, a logic that absolutizes the subject-object correlation and makes it impossible to think outside of it. If the position of naive realism characteristic of pre-Kantian philosophy was before Kant was fraught with ideological dogmatism, then the problem of correlationism is to feed skepticism and religious fanaticism. The end of metaphysics, depriving the mind of claims to the absolute, took the form of a heightened return of the religious. The necessity to restore access to the absolute is realized throughout the principle of factuality that presumes contingency of laws of nature, not eternal, but continuous in the course of indeterminacy. From the fact that time can actualise any possibility without sufficient reason to do so emergentist positions of Meillassoux derive.

Grant, in turn, accuses Kant (as well as Heidegger and Aristotle) of naturicide, he prefers Plato and Shelling who, according to his interpretation, do not reduce nature to the set of actions of individual bodies. This kind of reduction he calls *somatism*, and illustrates by an example of Aristotle's conceptualization of movement – the source of movement is collocated outside matter, the act precedes potency, and it leads to a passive conception of nature. On the contrary, nature is more like a multiplicity of forces and these forces are not exhausted in the objects that produce. This additive idealism or inflationary realism of Grant permits him to give a genetic answer to Kant's question about the

conditions of the possibility of cognition. A thought is real because it is a continuation of reality, an idea is a stage in the process of reality formation, therefore we cannot cognize reality completely, since the very attempt to cognize it, changes it.

Castro underlines the role of set theory in the speculative thought and the key role of Alain Badiou who introduced mathematics as ontological ground into continental tradition. We find the thesis of non-existence of the world as a whole in Meillassoux as one of the figures of factuality, in Gabriel in a more radicalized way because set theory according to him still has the implicit idea of the whole due to the fact that each quantitative totality presumes some qualitative criteria that stabilize this totality as such. In the words of Jocelyn Benoist it presumes “the myth of colorless objects”¹⁵. Gabriel offers the alternative of fields of senses that unlike sets are not organized throughout relations of inclusion/exclusion and do not have hierarchy. To exist as an object means to appear in a certain field of sense: “witches exist or appear in Shakespeare’s *Macbeth*; Shakespeare’s *Macbeth* exists or appears in my library; but witches do not exist or appear in my library”¹⁶.

With such definition of the object would disagree Harman as long as for him the object is first of all the surplus and substantial unity irreducible to its relations and interactions with other objects. Despite the fact that Gabriel admits the existence of the governing sense or prototype that at the same time does not determine completely the apparitions of the object, the problem of identity of the object remains. As mentions Arjen Kleinherenbrink: “This leads to the strange conclusion that an infinitely large stack of governing fields that govern governing fields is required for Arnold to remain the same individual during the simple act of leaving his living room and walking into his kitchen”¹⁷. Moreover, the main characteristic of the field of sense is that it exists as much as it appears in some other field of sense and this leads to the infinite deferral (not the same as infinite regress). This means that the things never gain enough specificity to appear as such¹⁸.

For the same relationism Harman criticizes Bruno Latour’s actor-network theory that dissolves objects in their relations. Still Latour for him remains one of the main *vis-a-vis* in tension with whom he forms his *OOO*. According to Harman almost all traditions of philosophy represent different grades of occasionalism. Hume collocates interaction between two entities in human consciousness in the form of habit, Kant – in the categories of reason. Latour’s actor-network theory is revolutionary as long as it secularises causality “–it is Joliot who links neutrons and politics, not God”¹⁹. So, for two objects to interact there is a need for a third one that will play the role of mediator. Castro finds it problematic because where is third there is forth and so on to the infinity. But we see some similarity between vicarious causation and example that Castro derives from Aristotle about relations between substances of father and son which are effectuated throughout accidents of “having reproduced with a woman (in the case of the father) and that of having been given birth to by that same woman (in the case of the son)”¹⁹ – in both cases the causality is indirect. Moreover, as writes Morozov – Harman precisely to avoid the paradox of the third man appeals to

the relation between real and sensible object that is the only one that does not need mediation but is direct²⁰.

After being analyzed, the representatives of speculative turn are collocated within the suggested framework of nominalism/idealism/skepticism/realism. Almost no one satisfies the criterion of being a realist completely. Meillassoux though providing access to Great Outdoors appears nominalist inasmuch as collocates the principle of identity of the sign in arbitrary, iterable and empty kenotypes²⁰. Brassier in all three periods of his philosophical course remains nominalist since refuses existence of phenomenal entities. Nominalism of Brassier is radical and warlike – phenomenology, the main brainchild of idealism in the philosophical field, represents anthropocentrism and pathological narcissism, operating with categories similar to phlogiston. The subjectivist ideology, fueled by phenomenology, serves the purposes of capitalism by convincing consumers that they are sovereign individuals endowed with freedom of choice. Polypsychism of Harman balances between realism/idealism and the problem of existence of external world is not posed since he moves in coordinates of Heidegger’s thought for whom the world is not an object, but a mode of being. Ferraris turns out to be nominalist as well as Meillassoux regarding universals: “universals are *traces* or *tracks*—that is, occurrences that can indefinitely iterate so that the complete series is nevertheless fully *present* nor entirely absent, but rather, in hermeneutical terms, is something that comes from the *past* and points towards the *future*”²¹. Grant and Gabriel, on the one hand, share the thesis of the non-existence of the world. On the other hand, Grant is realistic in the sense of reality of universals because things are not separated from ideas, Plato’s *eidos* are not the forms of things (such an understanding is a consequence of Aristotle’s formal interpretation of Plato), but the natural causes of things, ideas are as real as things. Gabriel has dedicated his second dissertation to ancient skepticism whose positions he disputes on the base of German idealism, so he does not share skeptical positions.

Summing up, we can make a conclusion that his work could be defined as a real philosophical investigation, since the main goal of philosophy is to clarify the words that we use unconsciously and habitually in order not to be enchanted by them, like in the cases of myth or ideology. Such demystification should not be, however, limited only by the fields of common sense or collective consciousness. Philosophical systems themselves should be revised in this way from time to time, even if, as remarks Whitehead²², philosophical system is never refuted, but only abandoned.

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Notes

- ¹ Ernesto Castro, "Contra la postmodernidad" within "Memorias y libelos del 15M", 2021, Arpa, p. 232.
- ² Ibid., p. 233.
- ³ Gilles Deleuze, "Logic of Sense", 1990, The Athlone Press, London, p. 9.
- ⁴ About negative side of irony and preference of humor: Graham Harman, "Object-Oriented Ontology: A New Theory of Everything", Penguin Books, 2017, p. 224-225.
- ⁵ Ernesto Castro, "Realismo poscontinental: ontología y epistemología para el siglo XXI", 2020, Materia Oscura, p. 270.
- ⁶ "Irony is a healthiness insofar as it rescues the soul from the snares of relativity; it is a sickness insofar as it cannot bear the absolute except in the form of nothing" – Søren Kierkegaard, "On the concept of irony", 1989, Princeton University Press, p. 77.
- ⁷ Peter Sloterdijk, "Critique of cynical reason", 1989, Cambridge University Press, p. 3.
- ⁸ R. Rorty, "Contingency, Irony, and Solidarity", 1989, Cambridge University Press, p. 73.
- ⁹ Ernesto Castro, "Realismo poscontinental: ontología y epistemología para el siglo XXI", 2020, Materia Oscura, p. 129.
- ¹⁰ About "additional realism" of I. Grant: Ernesto Castro "Realismo poscontinental: ontología y epistemología para el siglo XXI", 2020, Materia Oscura, p. 220.
- ¹¹ Artem Morozov, Neopragmatism and Speculative Realism // Omsk Scientific Bulletin. Series Society. History. Modernity. 2020. Vol. 5, no. 2. pp. 129-136.
- ¹² Ray Brassier, "Concepts and objects" within "Speculative turn: Continental realism and Materialism", 2011, Melbourne, p. 47.
- ¹³ Ernesto Castro, "Realismo poscontinental: ontología y epistemología para el siglo XXI", 2020, Materia Oscura, p. 19.
- ¹⁴ Ibid., p. 242.
- ¹⁵ Ibid., p. 278.
- ¹⁶ Ibid., p. 292.
- ¹⁷ Arjen Kleinherenbrink, "Fields of Sense and Formal Things: The Ontologies of Tristan Garcia and Markus Gabriel", Open Philosophy, 2018, p. 133.
- ¹⁸ Ibid., pp. 138-139.
- ¹⁹ Harman G., *Prince of Networks: Bruno Latour and Metaphysics*, Melbourne, re.press & Graham Harman, 2009, p. 102.
- ²⁰ Artem Morozov, Fetishism today, Philosophical and literary journal "Logos", 3 (93), 2013, pp. 193-200.
- ²¹ Ernesto Castro, "Realismo poscontinental: ontología y epistemología para el siglo XXI", 2020, Materia Oscura, p. 385.
- ²² Alfred N. Whitehead, *Process and Reality*, New York, Free Press, 1978, p. 6.