University of Windsor

# Scholarship at UWindsor

OSSA Conference Archive                                    OSSA 12

Jun 4th, 10:00 AM - 11:00 AM

# "Identity-Based" and "Diversity-Based" Evidence Between Linear and Fractal Rationality

Maurizio Manzin
*University of Trento*

"Identity-Based" and "Diversity-Based" Evidence Between Linear and Fractal Rationality

by Maurizio Manzin
University of Trento, CERMEG

*Abstract*

Every individual when making an opinion always *sees* from a here-and-now point of view characterized by an overlapping of beliefs (produced by inner activities dealing with reasonings, feelings and ethical standards). In the history of philosophy we can find two main types of evidence, based on what we might call "linear" and "fractal" rationality. In the light of the former, which almost exclusively fosters formal deductivism, evidence is based on mere systematic coherence, and all other sources of knowledge (intuitive, perceptive, symbolic, poetic, moral etc.) are marginalized – persuasion included. In the light of "fractal" rationality, which is more adherent to the 'irregularities' of life, evidence requires instead a meta-analytical approach, and persuasion is appreciated as a (not irrational) way to settle disagreements. I argue that these two different types of evidence and evaluation of persuasion are related, in the first case, to Neoplatonism and Cartesianism with their overestimation of *identity*, and in the second one to Plato's account on the coessentiality of identity *and* diversity. The analysis of the two approaches could contribute to a better understanding of the relations between diversity, persuasion and evidence, also in order to manage conflicts of opinions.

1. *Starting with an anthropology rather than a theory*

What do we talk about when we talk about argumentation? It would be easy to start a discussion on evidence and persuasion by taking into account some *grand récit* (to quote J.-F. Lyotard)[1] on the role of reasoning and speech in finding an agreement about the evidence of an object of proof, both privately and publicly. But this is exactly what we should not do when talking about evidence and persuasion in contexts characterized by inevitable diversities. I mean, the risk is to look at the state of the art always from a dominantly theoretical point of view, when the previous choices regarding the reference theory have already been made. These choices imply in fact an argumentative commitment which should in turn be justified, pushing us into the closed alley of a *regressio ad infinitum*. For this reason it would instead be more profitable to take into consideration the *anthropological* conditions in which individuals act and theorize.

---

[1] Lyotard 1984

When we consider whatsoever issue, we always consider it from a here-and-now concrete situation characterized by an overlapping of individuals' beliefs, which are produced by inner activities expressed by reasonings, feelings and ethical standards. Thus, when we maintain that the relation between evidence and persuasion depends on the underlying theory of knowledge, we should clarify what kind of anthropology we are dealing with, with regard to space, time and conditions.

Something could be assumed as 'evident' (i) either as a proposition which is valid according to a certain account on logic – typically, as a coherent deduction from some premises; or (ii) as a fact ascertained by empirical tools (from the Latin *evidens = ex + videre*, knowing by seeing) – as occurs with the s. c. scientific evidence. Both (i) and (ii) are current interpretations dating back to the origins of the modern age, and both fit very well with a rationalist anthropology. But in the light of a different anthropology – as the one common to Plato and Aristotle – evidence could also be provided (iii) by some speech procedures connected to *pistis* (and not only to *episteme*), as it is the case with dialectic, whose premises are neither axioms nor experimental standards ("protocols") but widely influential arguments well known to all experts in the matter (*endoxa*).

In cases (i), (ii) and (iii) persuasion is *not* necessary or at most it is a character intrinsic to truth itself (I will explain this point better shortly). Persuasion becomes necessary when such means (analytical demonstrations, experimental tests, dialectical – "critical" – discussions) cannot work. This happens when no stipulative conditions are available or when agreement on premises lacks for various reasons. In those moments the floor is open to the "likely" (*eikos*) – in Aristotle's words, "what can be otherwise than it is" – and the appeal to effective (i.e. persuasive) grounds for evidence is strictly required.

What changes in this case, in comparison to the previous (i) (ii) and (iii) cases, is the presence of a concrete (and *therefore* possibly unskilled or slightly interactive) audience: an audience who does not share stipulations, empirical knowledge or experts' commonplaces. This is a typically *rhetorical* situation – case (iv) –, which was familiar to a non-individualist and non-rationalist anthropology like the one of the Greek *polis* with its *agora*.

## 2. *A reasoning for the irregularity of life*

In a recent article C. Tindale alludes to "linear rationality" as something which "isolates actions into points in a sequence and fails to treat them as issuing from lives in

which values and beliefs are integrated in complex webs" (Tindale 2019: 15)[2]. In other words, a kind of rationality claiming for neutrality and impartiality (i.e. absence of valuable choices), contradictorily taken as a valuable choice. This has always been the line of modernity which broke out with Cartesianism, although it was already well known by Plato and Aristotle.

Of the two, especially the first criticized such choice-not-to-choose, if intended as the only authentic form of knowledge. In his dialogue with Meno, for instance, the Athenian makes possible for a young slave to demonstrate (a version of) the Pythagorean theorem, giving him only some simple axioms and a minimum of method. Plato's intention was to show how geometry, which does not seem to imply discussion on values, is an elementary (though useful, of course) way of knowledge, and how dialectic is conversely an higher way, capable of sustaining epistemic demonstrations like the Pythagorean even with unlearned people. Interestingly, in his *Republic* Plato (according to Heidegger 1998) deals with two meanings of truth: as *orthotes* (linearity) and as *aletheia* (revelation),[3] implying this way that besides deductive coherence also other means can provide evidence.

We can therefore assume that in classical theories analytical demonstrations (*apodeixis*), which are described as linear (*orthos*), do not exclude or marginalize other kinds of reasoning which are not linear. The nonlinear reasonings – as it has been specified by Aristotle in some of his works[4] – are the ones coming from *pistis* (trust), like dialectic and rhetoric (Piazza 2011). Trust then depends on the concrete *Lebensform* (Wittgenstein 1958, Boncompagni 2011) in which a discussion takes place. According to C. Tindale nonlinear rationality springs from "a system of managed diversity" (as he defines the "form of life")[5]. We could say that nonlinear rationality fits with situations in which stipulations and expert knowledge are not on hand, whereas linear rationality works only with abstract objects in abstract contexts.

My intention would be to use a term (and a concept) antagonistic to that of Tindale, to designate an intellectual activity capable of catching the roughness of *Lebensformen* with all their possible diversities and disagreements. The term I would like to propose here is "fractal rationality".

---

According to the *Encyclopaedia Britannica*[6],

**Fractal**, in mathematics, [is] any of a class of complex geometric shapes that commonly have "fractional dimension," a concept first introduced by the mathematician Felix Hausdorff in 1918. Fractals are distinct from the simple figures of classical, or Euclidean, geometry – the square, the circle, the sphere, and so forth. They are capable of describing many irregularly shaped objects or spatially nonuniform phenomena in nature such as coastlines and mountain ranges. The term *fractal*, derived from the Latin word *fractus* ("fragmented," or "broken"), was coined by the Polish-born mathematician Benoit B. Mandelbrot etc.

This divide between an Euclidean perspective that conceives only regular shapes, and a fractal one that manages all irregularly shaped objects[7], is precisely the turning point of my argument on rationality and its connection with evidence and persuasion, as I am trying to clear up in the following section.

3. *The privilege of regularity: a short history*

Once distinguished and named these two species of rationality (linear and fractal) – or to say better these two different attitudes towards reasoning – I would like to refer to some previous studies of mine focused on the origin of "systematic thought" in Western legal philosophy[8], because the exclusive preference for linear rationality (*episteme*) and the subsidiary contempt for reasoning based on trust (*pistis*) are deeply rooted in the history of Western thought. This section of my paper will therefore provide a (necessarily) brief overview on how the privilege of linearity broke off the fractal tradition of dialectic and rhetoric that dated back to the ancient *paideia*.

The privilege of "systematic thought" is a consequence of the success gained by the later developments of Platonism (s.c. Neoplatonism), due to the reception of Plotinus' theories (203/205 - 270 AD) and to the drafting of *The Enneads* made by his favorite pupil Porphirius (233/4 - ?305 AD)[9]. According to the philosophical accounts which were worked out by the many scholars who followed Neoplatonic teachings, *identity* and *unity* should be considered the golden standard for knowledge. All visible and invisible things, which seem prima facie to be different and many, should be regarded as parts of a whole that, in its being, forms an absolute and perfect "One". The search for identity

---

[6] https://www.britannica.com/science/fractal
[7] On "non-Euclidean" reasonings in legal argumentation see Manzin 2018.
[8] Manzin 2008.
[9] In my book I point out to what extent and fidelity Porphirius did so.

and unity – maybe a counterpart of the real historical situation, characterized by the fracture of Roman political and civil institutions and by a growing sense of incertitude – became this way the supreme ideal of a great number of philosophers.

In the fifth century AD, when joining the Neoplatonic Academy of Athens, Proclus (412 - 485 AD) picked up the inheritance of the *diadochoi* ("successors" – as the Neoplatonists called themselves) and developed it in his most influential work: *Elements of Theology*, where the One (*en*) stays at the top of a universal hierarchical triadic system that incorporates, under the pure essence of God (identity of the One to itself), all the other ranks of being ("elements"), either visible or invisible. In "systematic thought" each element is linked to the other according to a continuous ascending or descending line, leaving no room to interruptions or fractality – an expression of a sort of *horror vacui*.

After the closing of the Academy of Athens (529 AD) ruled by Christian emperor Justinian the Great, the privilege of linearity and identity did not cease – it was simply translated into orthodox Christian terms, thanks to the work of a mysterious writer who named himself Dionysius the Aeropagite, pseudonym of a Syrian author of the fifth or maybe sixth century AD. The *Corpus Dionysianum* (or *Corpus Aeropagiticum*) spread widely through the byzantine empire, but was 'discovered' in Western Europe only after its translation into Latin by John Scotus Eriugena in the eight century AD. Thanks to Scotus' translation (and much later also to the *Liber de causis*) Dionysian paradigm of hierarchical order gradually became a normative one in philosophy, theology and law, as can easily be ascertained looking at the Scholastic tradition – once again, maybe as a counterpart of the real historical situation, dominated by the struggle between ecclesiastical and political powers.

Such obsession for linearity and order in a world of diversities and conflicts is symptomatic, and let us suppose that whenever an era is felt as one of dramatic change and discontinuity, people (it does not matter if learned or not) are compelled to prefer a thought capable of reassuring against the unpredictability of events.

This is the case of Descartes (1596 - 1650), who maintains that the rising of doubts (discontinuity) must conduct to an analytical decomposition of complex elements into simpler ones, and to a successive recomposition into a deductive *linear* chain (continuity). Descartes' *grand récit* pushed dialectic and rhetoric (i.e. fractal rationality) out of the stage of 'authentic' knowledge, relegating them to the field of mere literature. After Descartes and until quite recent times, notwithstanding the fierce opposition of some isolated authors (the Neapolitan G.B. Vico first and above all), Cartesian narrative and

the paradigm of linear rationality dominated the epistemological landscape of Western thought for centuries, creating the gap between the "two cultures" (Snow 1959, 1963) – in my terms, the linear ("Science" with capital initial) and the fractal (the humanities).

### 4. *Identity vs difference (and a third way)*

It could now be of some interest to know that the authors in favor of what I have called fractal rationality – starting with Plato himself – did not oppose difference and multiplicity to identity and unity. This point is delicate and deserves further deepening.

It is notorious that Plato put logic based on *pistis* (and especially dialectic) alongside science based on *episteme*, depending on the premises provided for the discussion. This option for complementarity, which avoids an absolute divide between linear rationality and other kinds of speech activities, is rooted in Plato's account against dualism, as reported in his *Sophist*. In this dialogue the Athenian criticizes his juvenile preference for a strict separation between being and not being, inherited from Parmenides' traditional doctrine. By saying that "in a certain sense not-being is, and being, on the other hand, is not"[10] Plato establishes the coessentiality of identity and difference as a basis for his metaphysics, a basis that turns to be the very antidote to every form of radical dualism (as Gnosticism, for instance), and specifically to the separation between *episteme* (based on deduction from 'self-evident' premises) and *pistis* (based on confrontation between opinions)[11].

To give a fairly trivial example, saying that A is not B (difference) helps to determine that A is A (identity or sameness). In other words, after Plato's "parricide", not being *pros eteron* (compared to the other) will no longer be a matter of absolute opposition among A and B, C etc. but rather a matter of confrontation finalized to the best determination of what A really is. With the appreciable consequence that, instead of building walls between identities, we can face all possible opinions about A without fear of negation, saving this way the value of relation.

The Platonic crucial idea of the coessentiality of identity and difference can also be understood in the light of the contradictory account of the 'two principles' (*archai*), typical of every dualism, according to which there are two opposite principles: the one of being and the one of not being, both to be intended as separate and incomparable among each other. The contradiction lays in the evidence that, if each of them is principle of

---

[10] See Plato, *Soph*. 241 d. Transl. by B. Jowett (http://classics.mit.edu/Plato/sophist.html).
[11] According to this kind of dualism, knowledge based on *episteme* is always true, while the one coming from opinions is always false. In this sense, whatsoever act of persuasion is irredeemably deceptive.

something, none is actually *the* principle: there would in fact be a principle by virtue of which A is A (being), and another principle by virtue of which A is not A (not being), whereas a principle is a principle if by virtue of it *all* things – and not only *some* – are. Then to be *the* principle it must take into one either identity (of A to A) or difference (of A from ¬A)[12]. And that's the reason why Plato rejects the supremacy of identity without however rejecting identity itself.

An idea which will be broadly – and under many aspect better – developed by his pupil Aristotle, who will assign a very particular role to the principle of non-contradiction and put dialectic and rhetoric (both coming from *pistis*) alongside analytics (coming from *episteme*) as means capable of managing the difference of opinions in dialogical situations and public discourse.

What is relevant for me at this point of my discussion is to stress the existence of two different accounts on rationality – the linear and the fractal – which have remote origins in the history of philosophy. The linear is based upon the overestimation of mere identity (A=A), while the fractal is based upon the appreciation of the coessentiality of identity and difference (A=A *and* A≠¬A). To be shorter, I will hereinafter refer to the latter as the one of "diversity".

### 5. *Identity-based and diversity-based evidence, and the role of persuasion*

The approach based on diversity and the one based on identity coexisted in Western thought for centuries, although with fluctuating luck. The first one – the fractal –, which as outlined above was consciously or unconsciously rooted in a classic trend deriving from Plato and Aristotle, declined with modernity and survived only in a literary guise. The second instead – the linear –, which is well represented by Cartesianism, ended up occupying the whole scene of 'authentic' knowledge, rapidly assisted by the power of technique (that it made possible).

If we accept this account on a divided rationality we should then also distinguish between "identity-based" and "diversity-based" evidence, as I mentioned in Section 1.

The first kind of evidence has a *concrete* nature, the second a more *abstract* one – abstract in the sense that the object of proof has to be 'extracted' from the living situation of here-and-now, characterized by "a variety of forms of life that overlap and crisscross in a variety of ways" (Tindale 2019: 13), and shifted in a mental order where every shape

---

[12] Such idea of *coessentiality* is well represented by the symbol of Tao, in which the white and the black areas are not rigorously separated, but a part of the one is inside the other.

is conceived as regular (to recall one of the founders of modern scientific thought, the Italian G. Galilei, an order in which we assume that "the great book of nature is written with triangles, circles and other geometrical figures").

"Identity-based" evidence, which is grounded on mere formal consistency of the conclusions with respect to the premises, could hardly be intended – within a classical perspective – as something which implies persuasion in the proper sense of the word. According to Plato and Aristotle it is possible to speak of persuasion only in relation with truth[13] (it is notorious that they fought against Sophists' relativism and their inappropriate use of speech techniques aimed at convincing people about every sort of opinion). For them, persuasion without truth is simply a deception – a "pseudo-persuasion"[14] (Plato and Aristotle, for instance, complain the eristic use of syllogisms – *eristike techne* – by which an argument is presented as logic only to hide its propagandistic purpose)[15].

As underlined by A. Zadro (1983), to understand the relation between persuasion and truth we should first take into account the two forms of Greek genitive – the subjective and the objective. In the case of subjective genitive, persuasion *of* truth means: the persuasion that spreads from truth itself, as it happens with mathematical demonstrations. In this case evidence is a character of the premises (it comes *before*) that is "preserved" in the conclusions, if they are coherently deducted. This kind of persuasion can work only with expert people, for whom premises are clear by themselves ('self-evident'). In the case of objective genitive, persuasion *of* truth means properly: persuasion *to* truth, in the sense that evidence is the outcome  of an argumentative process (it comes *after*) and – consequently – the floor is open to the means of persuasion suitable for different types of audience (*psycagogia*).

This is exactly the purpose of rhetoric and implies that evidence on things can be achieved "in many ways" (*pollachos legetai*)[16], and not exclusively through the demonstrations operated within experts. In other words, if "evidence" comes from the Latin *videre* (seeing), an object of proof can be seen differently with different eyes, as it occurs when more people discuss about something in concrete situations, particularly in public contexts. There  may be some people who see above all with the eyes of the heart (*pathos*), others who are sensitive to the moral attitude of the speaker (*ethos*), and others

---

[13] On that recently also Rocci 2017.
[14] Zadro 1983.
[15] See Plato, *Taeth.* 165 d;  Aristotle, *Soph. Ref.* 33, 183 b.

[16] Arist., *Phys.* 1, 2, 185 a; *Met.* 4, 1003 a.

who look more at the logical frame (*logos*). Thus persuasion has to be differently declined.

It is precisely the concreteness of the situations that brings into play the variety of means by which an object of proof can be assumed, given that every stimulus coming from outside is processed by individuals according to logic, feelings and moral values interacting with each other (no need to take here out some recent neuroscientific discoveries about the s.c. "system 1" and "system 2")[17]. With extreme care for the diversity of *psychai*, the pioneers of the fractal account deepened the role of *ethos*, *pathos* and *logos* in building arguments, providing a set of intuitive, perceptive, symbolic, poetic and moral tools. Their guiding idea was that reasoning consists of a continuous adaptation to concrete situations and that nothing is more reasonable than the inevitable clashes among different opinions, especially when deciding about what to do. They maintained in fact that if reasoning needs to ascertain what counts as evident under the contextual aspect, it is not in order to 'neutrally' establish how things go on, but to move from a certain state of affairs to another. This means that, according to the fractal diversity-based account, knowing and making (quiet and motion, in Platonic terms) mutually implicate, and that an agreement on something as evident – provided by persuasion – is usually oriented by some need to act, regardless of modern Hume's guillotine.

For the supporters of fractal rationality, evidence is often problematic and requires recourse to what is defined today a "meta-analytical" approach. It is problematic because disagreements are *physiological* and not *pathological* (as they are considered in a linear mentality). Since the time of Heraclitus, *eris* (disagreement) has been interpreted as the *arche* (principle, origin) of *dike* (justice)[18], that means: difference of opinions is the reason on the basis of which people discuss about what would be right or not to do. No disagreement means no search for truth, no reasonable interactions between individuals or groups of individuals, no need for persuasion, in the end no *polis*.

We might wonder at this point what room would be left for persuasion, if not the only one guaranteed by the subjective genitive – the 'necessity' to admit as evident what spreads from truth itself in the eyes of undisputed experts.

No need to say how undesirable would be to live in a 'Perfect City' where all doubts were resolved by 'linear' experts like these.

---

[17] Kahneman 2011, Damasio 1994.

[18] Heracl., *fragm*. 22 b 80 DK.

References


Augustine 1995
Augustine of Hippo. *De doctrina Christiana*. Oxford early Christian texts. R.P.H. Green (ed. and trans.). Oxford, UK: Clarendon Press


Boncompagni 2011
Anna, Boncompagni. *From the ground to the background. Form of life as "the given" in Wittgenstein*, in *L&PS - Logic and Philosophy of Science* 9(1): 451-460


Damasio 1994
Antonio, Damasio. *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: Putnam Publishing


Heidegger 1998
Martin, Heidegger. *Plato's Doctrine of* Truth. T. Sheehan (transl.), in *Pathmarks*. W. McNeill (ed.). Cambridge, UK: Cambridge University Press


Kahneman 2011
Daniel, Kahneman. *Thinking, Fast and Slow*. New York: Farrar Straus & Giroux


Lyotard 1984
Jean-Francois, Lyotard. *The Postmodern Condition: A Report on Knowledge*. G. Bennington & B. Massumi (transl.). Manchester, UK: Manchester University Press


Manzin 2008
Maurizio, Manzin. *Ordo iuris. La nascita del pensiero sistematico* [The Birth of Systematic Thinking], Milan: Franco Angeli


Manzin 2018
Maurizio, Manzin. *Are There 'Non-Euclidean Geometries' for Judicial Reasoning? Epistemological Pluralism facing the Crisis of Legal Formalism*, in Marko, Novak & Vojko, Strahovnik (eds.). *Modern Legal Interpretation: Legalism or Beyond*. Newcastle upon Tyne, UK: Cambridge Scholars: 139-159


Natali 2011
Carlo, Natali (ed.). *Aristotle: Metaphysics and Practical Philosophy: Studies in Honour of Enrico Berti*. Leuven: Peeters Pub & Booksellers


Piazza 2011
Francesca, Piazza. *Pisteis in Comparison*: *Examples and Enthymemes in the Rhetoric to Alexander and in Aristotle's Rhetoric*, in *Rhetorica* 29(3): 305-318


Rocci 2017
Andrea, Rocci. *Modality in Argumentation - A Semantic Investigation of the Role of Modalities in the Structure of Arguments*. Dordrecht: Springer

Tindale 2019
Christopher W., Tindale. *Strange Fish: Belief and the Roots of Disagreement*. ECA Groningen 2019 Conference, draft (to be published in the Proceedings)

Wittgenstein 1958
Ludwig, Wittgenstein. *Philosophical Investigations*. G.E.M. Anscombe (transl.). Oxford: Basil Blackwell

Zadro 1983
Attilio Zadro. *Verità e persuasione nella retorica classica e nella retorica moderna* [Truth and Persuasion in Classic and Modern Rhetoric], in *Verifiche* 12(1), 1983: 31-50