Organon F 2019: 1–23
DOI (to be assigned)

ISSN 2585-7150 (online)
ISSN 1335-0668 (print)

RESEARCH ARTICLE

Feyerabend's Alternative Theories within Goodman's Worldmaking

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Received: 25 January 2019 / Accepted: 26 November 2019

Abstract: The main purpose of this paper is to compare two pluralistic approaches to knowledge, Goodman's theory of worldmaking and Feyerabend's methodological anarchism. It therefore examines firstly, the concept of world-versions, which according to Goodman create our worlds and at the same time are crucial for achieving a better understanding of reality; and secondly, the concept of alternative theories which are built upon pluralism and, according to Feyerabend, secure knowledge and make scientific progress possible**.** Feyerabend's concept has been rejected by many, seemingly for its lack of limitations. In line with this argument, I propose that based on the comparison of these two pluralistic approaches, the alternative theories can be understood as a part of worldmaking, for Goodman's theory has wider applicability since it encompasses not only science but also art. Furthermore, I suggest adopting Goodman's principle of rightness, the criterion of functionality in his worldmaking, as a criterion within Feyerabend's methodological anarchism when establishing the prevailing theory. It is to be expected that such a juxtaposition will uncover inconsistencies, in particular regarding boundless relativism and the vague terminology in both conceptions.

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Keywords: Alternative theories; methodological anarchism; Nelson Goodman; Paul Feyerabend; philosophy of science; theory of symbols; worldmaking; world-versions.

1. Introduction

Nelson Goodman introduced world-versions as part of his worldmaking (Goodman 1978) when trying to explain that we have not only one world, but many. There may be various versions, creating various worlds. If a version does not function well for us, causing us to misunderstand what is going on around us, we know it must be changed. Our worlds then change depending on the time frame, information, a given symbol system, etc.

Paul Feyerabend presents alternative theories as a part of his methodological anarchism (Feyerabend 1975).[1] He advocates the idea that a plurality of theories guarantees the development of science, where one theory generates its alternatives immediately upon its accession. An alternative theory replaces the old one when it is no longer sufficient to explain phenomena.

Both conceptions show similar pluralistic features and further claim that there is no symbolic system or methodology to be preferred while describing the world. However, I believe that a preferred symbol system and set of rules must be established, particularly within scientific discourse, if science wants to retain its prominence. Feyerabend's alternative theories can therefore be interpreted not only within Goodman's worldmaking, but the criterion of rightness, which was originally designed by Goodman, could be used for Feyerabend's methodological anarchism when describing the process of theory selection.

According to both Goodman and Feyerabend, pluralism is a good starting point for any discourse. However, only pluralism itself can neither create versions with no criteria nor ensure scientific progress. It works well for Goodman because he realized the danger of an uncontrollable pluralism and therefore set other criteria to avoid absolute relativism. On the other hand,

[1] Methodological anarchism was first presented in *Against Method,* published in 1975; for the purpose of this study, the 1993 edition is used.

Feyerabend built his concept upon pluralism, for he tried not to contradict his own anarchism: yet to leave pluralism "taking care of the job" seems implausible if the concept of alternative theories is to be functional. Moreover, if one examines his concept one is left with the need for some form of criterion. Therefore, I suggest using Goodman's very own criterion of rightness, for it is flexible in definition (defined in relation to the specific subject or discipline) and leaves pluralism somehow unharmed.

2. Goodman's worldmaking

Goodman presents his theory of worldmaking, a conception of knowledge of the world expressed in various symbolisms, in *Ways of Worldmaking.* It embodies Goodman's claim that in the course of modern philosophy, the structure of the world has changed. From the initial seeking of such a structure in the reality surrounding us, we turned our research to the structure of mind, then to the structure of language, then finally to the structure of symbols. In other words, a fixed world which was supposed to be found was exchanged for the diversity of the several symbol systems of the sciences, the arts, philosophy, everyday discourse, and perception. He claims that worlds cannot exist without symbol systems; they are dependent upon them. Symbol systems are created by humans and they help us retain some kind of structure and order in the arts and sciences (Goodman 1978, x).

Goodman claims that there is no such thing as the real world—a ready-made, unique, independent, absolute reality, for "there are many worlds, if any." In his conception, the one world may be taken as many or the many worlds taken as one; it only depends on how one takes it (Goodman 1978, 2).

From Goodman's perspective, pluralism about literature appears more plausible than pluralism about reality. The proposition declaring that different interpretations define different worlds looks much more believable and clearly less dubious than the proposition that different versions define different worlds,[2] although Goodman and Elgin (1986, 567) claim that there

[2] From whence follows Goodman's conviction that a single text underlies different interpretations. That may seemingly, by analogy, support the conclusion that a single world underlies different versions.

are important differences between the two cases worthy of further discussion.

These worlds should not be conflated with possible worlds; they are all actual (Goodman 1983, 271). They are made of the so-called "world-versions,"[3] of which some can be irreconcilable and in conflict with others (Goodman 1978, 3). Versions are perceived under one or more frames of reference; we cannot say anything about the world in itself apart from the all frames.[4] Versions are made of various symbols, and they may encompass descriptions, depictions, pictures, world perceptions, etc. Even a point of view can be considered to be a world-version (Goodman 1978, 5).

Goodman finds it easier to talk about versions rather than worlds themselves, possibly because it has never been clearly stated how many versions one world can have. However, if one asks about the content of the worlds, he explains it but, by doing so, denies any solid foundation. There are many stuffs—matter, energy, waves, phenomena—that arise along with the worlds. He goes even further. He clarifies that worlds are never made from scratch, for worldmaking starts from the worlds already known. Therefore, making is remaking; it is a process of building a world from others. There is always some old version or world[5] that we have at hand; we are stuck with it until we have the determination and skill to remake it into a new one. In other words, worldmaking begins with one version and ends with another (Goodman 1978, 6–7, 97).

Worldmaking does not stop there, though. After having accepted the proposition that a world is made by worlds that are but versions, with substance dissolved into a function, one must face the questions of how worlds are made and tested. Goodman suggests the following ways[6] of making a world: a) composition and decomposition, b) weighting, c) ordering,

[3] Sometimes plainly referred to as "versions."

[4] Goodman (1983, 270) expresses the same thought metaphorically: "The innocent eye is a myth long dead."

[5] Goodman (1978, 97–101) admits that philosophers from antiquity, such as Thales, Anaximander and Democritus, had their world shaped by religion, superstition, suspicion, hope and experience.

[6] The definite article is here omitted intentionally. Goodman only suggests possible ways. The classification should not be taken as mandatory or clearcut.

d) deletion and supplementation, and e) deformation. These processes often occur in combination. As for testing, it will be discussed in the following section (Goodman 1978, 7–17).

3. Goodman's world-versions

Goodman takes relativist thinking into account but radical relativism has no place in his philosophy. There are many versions, but it does not mean that all of them are right; many can even contradict each other. However, everything we can learn about the world is contained in its right versions. For better understanding, we may want to define the relation among them and sort them into clusters, each cluster constituting a world. For many purposes, though, we can simply use the term 'versions' for the ways-the-world-is (Goodman 1978, 4).

Versions, as mentioned above, are made by any kind of symbols. There can be such containing words, numerals, pictures, sounds, or other symbols of any kind in any medium. However, regardless of their similarities or differences, Goodman considers the comparative study of the versions and visions and of their making to be a critique of worldmaking, for he claims that versions as such are incommensurable. What is meant is that in some cases, we cannot claim a verbal version to be better than a visual one if both bring the same piece of valuable information. The wording here is crucial. We can say that one of them is preferred or more suitable for a particular circumstance, but not that *this* is right and *that* is wrong (Goodman 1978, 94).

Therefore, the versions we create can be further segmented into literal, non-literal, metaphorical, verbal, non-verbal, etc.[7] There is no preferred version, therefore even no preferred symbolic system (language) which we use for describing the world. Whence it follows that there is no reason to prioritize scientific descriptions on the grounds that science is believed to provide us with neutral facts,[8] in contrast with the vague and metaphorical arts

[7] Goodman never gave a full list of possible versions. The above were collected from (Goodman 1978) and (Goodman and Elgin 1988).

[8] The notion of science as a collection of neutral facts.

(non-science). Science and the arts have the same main objective, which is knowledge (Goodman 1978, 1–6).

According to Goodman, the reason why we keep on preferring some versions, particularly the scientific, lies in convention. Some theories, hypotheses and predicates are prioritized while some others are left behind. It is, however, only a matter of habit and experience that we believe that all emeralds are green rather than *grue* (Goodman 1955). Even if we consider the entrenchment[9] of a predicate, Goodman's very own attempt to solve his New Riddle of Induction, we find ourselves stuck in a circle. However, entrenchment plays a great part; it derives from the use of language and results from the actual projections conducted in the past. Therefore, it leaves us dependent on convention, past experience and congruence with practice and the actual use. As a matter of fact, Goodman himself does not consider his the only possible solution and later realizes the importance of experience and habitual action, which can be understood as the practice of language users. Putnam even states that Goodman finds entrenchment not to be innate but resulting from philosophical reflections regarding the practice of a language community (Goodman 1955, viii). In *Ways of Worldmaking*, he speaks of rightness of categorization instead, and admits that it is a matter of fit with practice (Goodman 1978, 138).

As a result, he claims that we simply prefer to apply to a sphere of objects a specific scheme which we find comprehensible. The issue is that science gives us facts, and facts are problematic because each version states its own facts (Goodman and Elgin 1988, 125, 183–84).

The vast variety of versions is striking not only in the sciences, the works of various painters and writers, but also in our perceptions as influenced by circumstances, by our own insights and past experiences. We can have contradictory versions which may be right in different systems, but that does not mean that all versions are right; it is important to distinguish between

[9] Generally speaking, if a term or a predicate is entrenched it has an established position in our language practice. Goodman's theory of entrenchment originally appeared as an attempt to solve his own *Grue* paradox. Its principle is based on ordering hypotheses in the light of past inductive practice. It depends upon the record of past actual projections and the frequency with which the predicates were actually inductively projected in the past (Goodman, 1955, 84, 94–95).

those that are right and those that are wrong. We cannot just test a version by comparing it with a world undescribed, undepicted, unperceived (Goodman 1978, 3–5). The process of telling the wrong version from the right one is more complicated than that; it is rather a matter of interaction between symbol users and the assumed world. Every version is further tested and confirmed by rightness (Goodman 1978, 109–38).

4. Feyerabend's epistemological anarchism

A similar pluralistic approach to knowledge is offered by Feyerabend when he comes with his epistemological anarchism or also methodological anarchism. It serves as a critique of methodological monism which, he claims, does not lead to any progress in science or its development. This ironic stance was described in *Against Method*. Drawing upon various examples from the discourse of science, he shows how irrational it would be to claim that only one correct scientific method could grant us progress (Feyerabend 1993, xiii–xiv).

Feyerabend's conception refuses to ascribe the priority to scientific descriptions just on the grounds that science is believed to provide us with neutral facts. Science is, in its very essence, an anarchic enterprise. Theoretical anarchism is, thus, more humanitarian and more likely to encourage progress (Feyerabend 1993, 39). Needless to say, Feyerabend's stance is not aimed against science so understood[10] but against ideologies that use the name of science for "cultural murder." Cultural murder is committed when the progress of knowledge involves killing minds that is, according to Feyerabend, connected to the process of pushing Western ways and values into all four corners of the globe. Generally speaking, the "killing of minds" can be understood as the rejection of non-scientific procedures, as it is

[10] "I am not against science. I praise its foremost practitioners and (in the next section) suggest that their procedures be adopted by philosophers. What I object to is narrow-minded philosophical interference and a narrow-minded extension of the latest scientific fashions to all areas of human endeavor—in short what I object to is a rationalistic interpretation and defence of science." (Feyerabend 1993, 122)

believed that results gained by means of non-scientific methods are not to be taken seriously (Feyerabend 1996, 3–4, 14).

For we have no unified scientific method that contains unchanging and absolutely binding principles for conducting science; the belief that science is the best way of gaining knowledge proves to be unjustifiable, and, moreover, the procedures and results that constitute the sciences have no common structure (Feyerabend 1993, 1). The results presented by science do not alone prove its excellence since they often depend on the presence of non-scientific elements, and such elements, points of views or methods are both necessary and beneficial to science. Therefore, one must accept that science contains not only one but many approaches to research (Feyerabend 1996, 26). Today science prevails, according to Feyerabend, not because of its comparative merits, but "because the show has been rigged in its favor" (Feyerabend 1978, 102). Thus the biggest issue is that science is supposed to be about something while creativity need not be (Feyerabend 1996, 24).

It has been clearly stated that the whole idea of a fixed, unified method or even a fixed theory is naïve and maybe a little preposterous. If we want to keep any objectivity, precision or truth, there is only one principle which can be defended under all circumstances and does not inhibit any scientific progress: *anything goes* (Feyerabend 1993, 18–19).

From this perspective, pluralism, and therefore a pluralism of methods, affords us the best chance of securing knowledge. We shall ask for the freedom of science and its free revolutions because only a plurality of theories ensures scientific progress and only by means of such progress do we gain knowledge (Feyerabend 1999, 4–5).

5. Feyerabend's alternative theories

Feyerabend aims his research primarily at scientific methods and their descriptive apparatus. However, he speaks mainly of science not because he finds other aspects of life to be less important but because he realizes that people tend to set borders between science and non-science and attach more importance to science due to its sometimes illusory credibility. He does not think it is special. We have no strict sets of rules in life; we may have laws and moral codes but no one can really tell us how to live. However, in

science, thinkers and philosophers have been trying to set such rules and tell scientists how to do their job. Pluralism is taken as part of everyday life, disguised as freedom or tolerance; it is much more complicated to accept pluralistic views in science; hence Feyerabend's insistence.

Moreover, it seems that in an ideal case we would have similar criteria in both life and science, i.e. freedom, passion and pluralism leading us to a better world. Feyerabend's idea of science that regulates itself is tempting; however, life does not need to be regulated for it is not perceived as a hard science.

Feyerabend criticizes the concept of science as a symbolic system that describes neutral truths and independent facts. Inevitably, with the critique of one unified method for science comes the critique of one prevailing theory that can embrace and interpret all facts. He believes that no theory ever agrees with all the facts in its domain, but yet not always it is the theory that is to be blamed, for facts are constituted by older ideologies, and there is a reason to suppose that a clash between facts and their theory may be proof of progress. Besides, if a theory clashes with evidence, the reason may be that the evidence has been contaminated by wrong samples or wrong measurements (Feyerabend 1993, 39).

As mentioned above, Feyerabend believes that a plurality of methods grants us progress in science and, therefore, gives us knowledge. In the light of this thought, he further asks for the freedom of science and its free revolutions, since a plurality of theories should guarantee free scientific progress (Feyerabend 1999, 4–5). In the history of science, people have always been pursuing unity,[11] whether it was unity in methodology or a unified theory rich enough to produce all the accepted facts and laws (Feyerabend 1993, 43).

His thesis about the influence of theories on our observations criticized the legitimacy[12] of observation statements and was supported by the claim

[11] According to Feyerabend, this desire for unity that underlies the many events surrounding us comes from the Western sciences (Feyerabend 1993, 43).

[12] As a thinker inclining to constructivism and taking Goodman into consideration, I would even speak of the *validity of observational statements,* for I believe that the validity of statements can be determined by referring to particular observations. For a non-constructivist, however, that may seem ineligible or even categorically wrong.

that observations (observation terms) are not only theory-laden but in fact fully theoretical (Feyerabend 1981, x–xi). Therefore, one must consider that observational reports or 'factual' statements either contain theoretical assumptions or assert them indirectly by the manner in which they are used, from which it follows that all facts are theoretical. Consequently, facts are both influenced and constructed by the prevailing theory. Furthermore, neither the rules, nor the principles, nor even the facts are sacred—we may, therefore, change them or even create new facts and new grammatical rules, and see what happens once these rules are available, applicable and have become familiar. One must note, however, that such an attempt may take considerable time (Feyerabend 1993, 22, 123).

The whole conception of alternative theories, where the prevailing theory generates its alternatives that sooner or later take over, has evolved from the thought mentioned above: *pluralism ensures scientific progress*. The progress is, however, kept alive thanks to the so-called scientific cycle, which is described in the following manner: scientific revolutions ensure a new theory and the new theory generates its alternatives immediately upon its accession. Therefore, such a plurality of theories that are both in conflict with each other and incommensurable[13] should then present crucial elements for maintaining the advance of science (Feyerabend 1993, 152–55).

Feyerabend gives a further exemplary explanation. He claims that research always starts with a problem, which results from a conflict between expectation and observation. However, an observation is constituted by the expectation. After having formulated the problem, one can start solving it—finding a theory that is feasible, relevant and falsifiable, but not yet falsified. In the next step, one has to criticize the theory that has been put forth when attempting to solve the problem. If successful, the criticism will eliminate the theory for good and simultaneously will create a new problem. If one wants to solve the newly arisen problem, one needs a new theory that reproduces the successful consequences of the older theory, denies its mistakes and makes additional predictions not made before.

It follows that there are two theories which overlap, the first being the old theory, the second one the new theory and the intersect represents the

[13] Feyerabend borrows the term "incommensurability" from (Kuhn 1962), but uses it in a distinctive way.

problems and facts of the old theory that are still remembered and have been distorted so as to fit into the new framework. This cycle keeps repeating itself. A theory generates its alternative immediately upon its accession and prevails until it is replaced by its alternative. Such a proliferation of incommensurable theories and their conflicts should keep science advancing, thus bringing us knowledge. In the light of this, it can be claimed that knowledge is not a series of self-consistent theories. It is not a gradual approach to the truth either; rather, it is an ever-increasing ocean of mutually incompatible alternatives (Feyerabend 1993, 152–57, 22).

6. Similar features in Goodman's and Feyerabend's approaches

There never was a discussion between Goodman and Feyerabend concerning multiple actual worlds or alternative theories. The most famous interaction was Feyerabend's reflection of Goodman's "new riddle of induction." Feyerabend's interest in Goodman's paradox was in accordance with Feyerabend's critical and deprecatory approach to rule-following in science; it shows how substantially Feyerabend was influenced by the later Wittgenstein.[14]

However, I argue that there are many similarities between the concepts that are worthy of further investigation. The most significant, which we shall examine individually, are that both theories 1) have a pluralistic background, 2) refuse to take truth as the main criterion for testing, 3) have a similar language-shaping interpretation of reality, 4) claim that sciences influence or even fabricate facts and, therefore, question the superior position of science when gaining knowledge, and last but not least, 5) consider our knowledge/understanding of the world to be always more or less partial.

Both Goodman and Feyerabend advocate pluralism over monism, but needless to say from different standpoints. Goodman goes beyond scientific discourse; he requires pluralism in all possible domains. In his conception,

[14] For more detailed analysis regarding the analogy between Goodman's and the Wittgensteinian criticism of inductive reasoning see (Schuster 2018); concerning Wittgenstein's "profound" influence on Feyerabend see (Feyerabend 1978, 114).

there can be a version which is scientific or even a world made of various theories/versions; however, as we know, not all the versions are scientific, there are many of them and they are made of many kinds of symbols.[15] Therefore, he not only asks for the plurality of versions but he also claims that there are many worlds. There is no world "w," no absolute reality waiting to be revealed by science. The whole idea that there is knowledge completely independent of the observer and neutral in every way is direly suspicious (Goodman 1978, 131–32).

Feyerabend is against monism in science and demands a plurality of methods within scientific frames, where any method can be right under specific circumstances. He believes that if a scientist wishes to understand the empirical content of our views as good as he can, he must introduce and use other views and adopt a pluralistic methodology (Feyerabend 1993, 14, 21). The pluralism which Feyerabend favors involves taking a wide variety of different methods and accounts of the world into consideration (Lloyd 1996, 252). Based on that he asks for a plurality of theories, which should guarantee free scientific progress, for he believes that actual science is much closer to pluralism than the defenders of monism would like to admit (Feyerabend 1981, 111).

His claim is further supported by the explanation that knowledge needs a plurality of ideas, even non-scientific ones, and by that it can be proven that well-established theories are never strong enough to eliminate alternative approaches. Such various approaches create various theories, thus pluralism is practically inevitable (Feyerabend 1993, 131). However, more than that, it is a part of our every-day life because "there are many ways of thinking and living" (Feyerabend 1995, 164).

Along with adopting pluralism as an important part of their conceptions, another issue comes into question. So much has been said about various versions and visions, about theories and their alternatives, but thus far no criterion has been set in order to distinguish those that are right from those that are wrong. How can we test or prove any to be wrong if for both Goodman and Feyerabend it is impossible to prove a version/theory to be wrong by comparing it with the world accessible to us?

[15] The general theory of symbol is presented in (Goodman 1968).

When searching for the objectives and the constraints of worldmaking, Goodman opens this topic and tries to set the criteria for success in making a world. It is clear that different standards are needed for understanding the vast variety of versions. For example, the distinction between true and false works well for us if applied to descriptive statements or scientific versions, but falls short if applied to metaphorical statements or paintings. Worlds, however, can be presented and made in many ways—in scientific theories, works of art, and versions of many kinds. Worldmaking goes far beyond theories, descriptions or statements, even language; it involves all kinds of versions. Goodman's relativism allows a greater number of right versions, but that does not mean that we make a world by putting symbols together at random. We must tell a right version from a wrong one by means of a criterion which, for worldmaking, is rightness. A version is not so much made right by a world as a world is made by a right version (Goodman 1978, 109, 94).

A consideration of standards other than truth is necessary, considering that we encounter not only literal statements; versions that make no statements have to be included as well. This leads us to the conclusion that truth is often inapplicable, hardly sufficient, and must sometimes give way to competing criteria.[16] Therefore, the true/false criterion seems insufficient for considering versions in general. Goodman offers rightness to be more adequate; it has wider application, considers temporality and is shaped and formed by circumstances (Goodman 1978, 107). Truth can be, of course, an occasional component of rightness (Goodman and Elgin 1988, 181).

Goodman admits that the conception of truth appears to be adequate for science but beyond science we do not always seek truth. Pictures or melodies are not considered to be true or false. The conception of rightness is proposed as a criterion in non-sciences, claiming that rightness of design differs from rightness of representation or description not so much in nature

[16] Goodman explicitly states: "Some truths are trivial, irrelevant, unintelligible, or redundant; too broad, too narrow, too boring, too bizarre, too complicated; or taken from some other version than the one in question, as when a guard, ordered to shoot any of his captives who moved, immediately shot them all and explained that they were moving rapidly around the earth's axis and around the sun" (Goodman 1978, 120–21).

or standards as in the type of symbolization and the mode of reference involved. Hence it follows that the truth of statements and the rightness of descriptions, representations and exemplifications is primarily a matter of fit, or fit with practice (Goodman and Elgin 1988, 136–39).

In sum, truth can be easily reformulated as the rightness of a true or false statement. Therefore, it seems intelligible to claim that rightness has a wider use—not only in the arts and non-sciences but rightly formulated, even in science.

Although it may seem complicated to abandon truth as a criterion according to which we test our knowledge, and adopt the conception of rightness both in science and the non-sciences, it may be even harder to live with no criterion whatsoever. If we have a closer look at Feyerabend, the conception of alternative theories seems rather difficult to adopt if we lack a standard according to which we decide which theory prevails. He claims that no theory can be refuted by means of confrontation with empirical facts. Yet for him, truth equals fact; these two terms can be interchangeable. After having disposed of truth, we may logically turn to consensus. However, according to Feyerabend, consensus[17] is deadly for the development of knowledge because it retards scientific progress (Lloyd 1996, 257). If we cannot take truth for a criterion and we do not have any other, and if we cannot rely on consensus, it seems impossible for us to decide which theory wins and why.

Although Goodman finds truth to be insufficient, he still somehow keeps it in business where science is considered or when speaking of literal statements; although masked by rightness, we can still find truth to an extent important in this field. Contrasting with Goodman, Feyerabend's field of study was restricted to science and yet he finds truth unimportant when refuting a theory because each prevailing theory states its own truth, or if we may so call it, *truthness*. What seems important to both Feyerabend and Goodman are functionality and consensus, although the latter is understood differently by them.

Goodman understands rightness as "standards of acceptability that sometimes supplement or even compete with truth where it applies, or even

[17] Nevertheless, Feyerabend realizes the power of consensus, however deadly he himself may consider it.

replace it for non-declarative renderings" (Goodman 1978, 110). Functionality and convention then create rightness. It needs to be pointed out, however, that it refers to the functionality of a system as a whole, after one adds a piece or pieces of information, not to a piece of information functioning by itself. Rightness, according to which some statements or depictions are proclaimed to be valid, can then be understood as a matter of the habitual action and practice of the symbol users (Goodman and Elgin 1988, 183).

Feyerabend, on the other hand, described the whole process of an alternative theory being somehow "born" from the old one, but the scientific cycle where one theory beats the other seems to be more important to him than finding a key, a criterion by which one theory ceases to be sufficient for scientists and knowledge seekers. Therefore, I argue that Goodman's conception of rightness could serve as a criterion for how each theory is selected to become the prevailing one. I further suggest that using such a criterion will show that Feyerabend's alternative theories may be partly feasible, but have a lot of inconsistencies. Moreover, it is necessary to highlight that the complete rejection of truth is not an option either in science or society because it is supported by our habits and the cultural environment in which we live.

Feyerabend insists that his main purpose is neither to substitute one set of rules with other sets of rules nor to offer some new standards, a new methodology which need be followed in science; his intention is to show that all methodologies have their limits (Feyerabend 1993, 32). However, his very own philosophy of science shows that no matter how pluralistic we may be and how many rules his philosophy allows us to break, not really everything goes. It exemplifies the truth that not only the dogmatic but also the anarchist methods have limitations.

In the light of this, it is also necessary to show Goodman's and Feyerabend's similar views on language. Goodman, with his constructivist attitude,[18] claims that there can be a language without worlds but no world

[18] Goodman avoids labelling and, usually, any kind of generalization; however, in *Reconceptions in Philosophy and Other Arts and Sciences* he clearly inclines towards constructivism, although he admits that it still needs a lot of work (Goodman and Elgin 1988, 189).

without words or other symbols. We then interpret what we perceive and shape our worlds accordingly. There is no world by itself, independently of language or symbol system. Such systems are created by people and they help us give structure and order to art and all the sciences (Goodman 1978, 6).

Feyerabend thinks similarly. He refers to Whorf, who had earlier formulated the theory that languages and the reaction patterns they involve are not just instruments for describing events, facts or states of affairs, but also shape them. The observation language, which we adopt with an alternative theory, then logically influences its facts (Feyerabend 1993, 164).

Both authors have, therefore, no difficulty in admitting that humans more or less co-create our reality; they are part of this world-construction. However, possibly for this reason, they also refuse to take the priority of scientific facts or the prior position of science in general.

Goodman points out the misleading power of perception and argues that not only science fabricates facts, but even perception makes its own. He finds it pointless to believe that facts are found, not made, and that they constitute the one world that is to be revealed by scientists (Goodman 1978, 89). On that basis, he further refuses to take the prior position of science and the "neutral" facts that are presented to us by scientists. He states that science denies its data and picks the right samples, which are then presented to us. Each theory has to be adjusted to fit the facts as much as facts have to be adjusted to fit a theory (Goodman 1968, 263). The dominant position of science against art is therefore unjust because facts are made as well as our worlds are. For Goodman, it is all about making and remaking; art and science have the same goal, which is knowledge. More precisely, they grant us better understanding.

Feyerabend's position is very clear on this matter, for as we have no unified method we cannot justify the preeminent position of science in our society. Science is just one way of gaining knowledge or information and not necessarily the best one. He adds that neither science nor rationality are universal measures of excellence; they are more likely particular traditions (Feyerabend 1993, 214).

He finds it problematic that many "educated citizens" take it for granted that reality is only what science or scientists say it is and that beyond that,

other opinions may be recorded, but need not be taken seriously. This picture of science is, however, wrong because he believes that science offers not one story, but many (Feyerabend 2001, 27).

Not only science offers many stories; for Goodman, many stories are presented by all versions, which include not only science but even non-science. With each right version being part of our world, we come to a better understanding of it.[19] Needless to say, our understanding is always partial. It comes with the seemingly endless cycle of making and re-making the world or worlds (Goodman and Elgin 1988, 161–62). Here we can see an obvious similarity between Goodman and Feyerabend. Successful worldmaking, which is to be achieved by getting to know the right versions and which is therefore always more or less incomplete, matches Feyerabend's alternative theories conception, for each theory brings new information and new views, leading us closer to knowledge. Both agree that our knowledge or understanding can theoretically be complete but that in practice we neither have the time nor the capacity to make it so. In summary, we eventually wind up with partial knowledge and partial understanding. Although it may seem reasonable to claim that the former and the latter can be interchangeable, the next section is intended to show that there is a reason for keeping them apart.

7. Different features of Goodman's and Feyerabend's approaches

Aside from all the similarities between both authors' theories, there are some asymmetries to be examined. In both theories, there are 1) different discourses of examination and different principles used, as noted above, and 2) several difficulties with distinguishing between incommensurability and comparison. Although these differences are few, they may prove crucial. Different discourses and the lack of a criterion are the very reasons for

[19] For Goodman and Elgin, understanding has a wider range of use than knowledge, although knowledge can be a part of understanding. There we can see a similarity with the conception of truth and rightness.

interpreting Feyerabend's methodology as a functional part of Goodman's theory of worldmaking.

As already mentioned, according to Goodman, science is only one of many accessible symbolic systems by means of which we create so-called versions. However, our world consists not only of verbal and literal versions, but of various kinds. In order to gain a greater understanding of things around us, ideally we need to get to know all the right versions and make sense of them.[20] However, Goodman admits that although we should try to make sense of them, it seems improbable that a human being should reach such a state of complete understanding/knowledge. If we add a piece of information to "our" version, it will never make sense by itself; a version works like a whole system. If the whole system works and if it further corresponds with our other beliefs, points of view and so on, we have made the version better through addition. Such a piece of information can be basically anything: a new element, a particle, a belief, even a book, but most importantly for scientific discourse, a theory.[21] Goodman's conception goes far beyond the discourse of science. As he points out, his primal concerns in worldmaking are metaphorical versions—worlds of fiction, poetry, painting, music, dance, etc., for he finds non-scientific discourse and its versions to have been rather neglected. However, he is willing to take "the real world to be that of some one of the alternative right versions (or groups of them bound together by some principle of reducibility or translatability) and regard all others as versions of that same world differing from the standard version in accountable ways" (Goodman 1978, 20).

In contrast, Feyerabend stays within the scientific discourse. When talking about his alternative theories, he applies his conception only in the realm of science and describes the ideal progressive theory cycle. However, he does claim that non-scientists are indispensable for scientists, for the non-scientific element is crucial for further development in science; yet this area lingers logically unexplored within his research. Goodman expanded his theory thanks to his general theory of symbols; Feyerabend did not have to cross this border when dedicating his research to the methodology of science, for he only used one symbolic system (language of science). It is

[20] The world is what all the right versions are.

[21] A theory can be either a version by itself or just part of a cluster of versions.

therefore understandable that Goodman needed a criterion with wider application of which the occasional part may be truth (for science), but Feyerabend dispenses with truth because science fabricates facts. These are further given to us when we accept a theory; in other words, facts are created by older ideologies and a specific theory itself. Pushing this line of considerations into extremes, it would mean that a scientist is able to predict all the facts which the prevailing theory is able to comprehend in a given domain.

When the theory proves to be insufficient, which means that it is no longer able to explain all physical events, we accept its alternative. After some time, once we are no longer able to predict more facts, an alternative takes over and this cycle keeps on repeating. The issue with such cyclic progress is clear: who is then to state according to which criterion we accept facts that are presupposed and predicted by a theory? It is certainly neither the state nor the church, for science should be independent of both of them (Feyerabend 1993, 39).

In such a cycle, Feyerabend proposes two main principles which should support scientific progress and lead to it: counterinduction and proliferation. Counterinduction is then a legitimate and reasonable move in science. Perhaps the best example of the principle of counterinduction would be Feyerabend's metaphorical comparison in which he claims that "we need a dreamworld in order to discover the features of the real world we think we inhabit," since the world cannot be explained from the inside by the principle of induction but by means of an external standard of criticism (Feyerabend 1993, 53, 22). If Goodman's concept embraces all versions, it should be possible to explain Feyerabend's stance within the frames of worldmaking. An alternative theory of a prevailing theory could be explained as a remaking of our old version, for we never start a version from scratch. However, a dreamworld Feyerabend describes could then be considered as a counterfactual version. It would not meet the required condition of being functional, but by showing a non-functional version we can test which ones work well for us.

In the light of his previous thoughts about facts being made, Feyerabend takes a stand that no theory can be refuted by means of confrontation with empirical facts. In other words, facts are created by older ideologies.

Goodman wrote a whole chapter about facts being fabricated and how the right exemplification can shape the sphere of objects within a theory. In other words, no version can be proven wrong by comparing it to the world accessible to us. Accordingly, no version can be refuted by means of confrontation with empirical facts (Goodman 1978, 91–92). However, the issue seems to be that Feyerabend postulates only one world described and revealed by means of many ungoverned methods and theories, whereas Goodman supposes many ways of worldmaking for many actual worlds.

Regarding this topic, Feyerabend further believes that a scientist must compare ideas with ideas rather than with "experience." Theories can be compared but the condition of the incommensurability of theories has to be taken into account. Each theory uses different observation languages and even if an identical term appears in two of them, they may differ semantically, so theories are incommensurable (Feyerabend 1993, 21, 51), whereas Goodman claims that the comparative study of versions and visions and of their making is a critique of worldmaking. It then follows that one should not compare versions with one another, because should they bring us the very same understanding/knowledge by different means or using different methods we would not be in a position to decide which way was the more eligible. This especially regards phenomena presented by science—a way which is, according to Goodman, unjustly prioritized—and phenomena depicted or performed by art (Goodman 1978, 94).

8. Conclusion

Considering what has been written about both theories, it seems peculiar but possible to consider Goodman's worldmaking to be an open, wider theory with no limitations in applicability and application; and Feyerabend's alternative theories within his methodological anarchism to be a closed one.

Goodman assumes that we co-create our world; we make versions. His goal is not only knowledge, which is sought by science, but understanding, which is typically favored by non-sciences. For better illustration, it could be described as a domain of understanding which encompasses the domain of knowledge. It becomes even more complicated if we imagine that we may

have uncountable amounts of domains of understanding containing smaller domains of knowledge, for we have many actual worlds.

Feyerabend, on the other hand, describes the domain of knowledge, for he particularly focuses his research on science and its methodology. However, the question remains: how is it possible for both concepts to have so many similarities and critical features when the field of application (one world in Feyerabend's, many worlds in Goodman's) is so different?

Let us start with an exemplification of Goodman's rightness working within Feyerabend's alternative theories as suggested at the beginning of this study. If we try to apply rightness to Feyerabend's concept we encounter two issues with which we need to deal. Firstly, we may inductively use the criterion of rightness in individual cases and secondly, we should come to realize that the criterion can be used even on a larger scale when setting a prevailing theory. In other words, it is necessary to narrow down the field of examination and the extension of rightness itself.

Feyerabend's famous example of Galileo, who built his theory upon an *ad hoc* hypothesis, was supposed to show not only that we do not need a unified method but also that having it would prevent progress in science. Instead, Galileo identifies the natural interpretations that contain an idea of the relativity of all motion and the law of circular inertia, and creates a new observation language (Feyerabend 1993, 54–55). If we apply the criterion of rightness defined as the functionality of a system as a whole in a conventional system of symbols[22] we discover that Galileo's idea works well for us when acting on our reality and coping with it.[23] Had he followed the notion of reality required by the church, society, or even scientists obeying given rules and methods, never he would have made such an important discovery.

As *ad hoc* as his hypothesis might have been, its functionality justifies the means by which it was acquired. However, that is why I argue that unknowingly—for the term was not coined back then—Galileo acted in accordance with the criterion of rightness all along. Despite his hypothesis having been built on a spontaneous basis, he did follow the rules defined by

[22] Yet we must not think of rightness as a convention or habit in the literal sense.

[23] The terms "acting on the world" and "coping with the world" are borrowed from (Dreyfus and Taylor 2015).

rightness. He discovered that his hypothesis worked well for us; if it had not, then the whole idea would have been lost and thus ultimately not taken seriously in the scientific discourse. On the same principle we can decide which theory is prevailing and which is already outdated.

Having shown the practical use of rightness, and thus demonstrated its use in scientific discourse, it appears to give rise to another question: who will define the criterion of rightness? I would argue that the simplest answer would be: scientists. They should be responsible for the definitions of individual cases, for they should be sufficiently qualified and able to defend their own methods and uses. A more complex answer would be: scientists under the supervision of philosophers.

We arrive at an interesting, unexpected conclusion: Feyerabend strictly insists on not following any dogmatic set of rules or any methodology, but nevertheless advises replacing induction with counterinduction, which contradicts his initial intention of not offering any new set of rules. Furthermore, it seems that in his pursuit of anarchy he unavoidably set some rules, for preaching "anything goes" sets a limitation if it excludes the possibility of having only one right method. This entails that science must have some rules, some regulated methodologies; however, what it does not show is who gets to do the choice.

It has been supposed that the concept of rightness could serve as the criterion for selecting alternative theories. Thus I argue that it would be possible to interpret Feyerabend in the context of Goodman's pluralism. The concept of alternative theories can be considered as part of Goodman's worldmaking, representing only the scientific domain, which is governed by knowledge. Therefore, there will be many alternative and incommensurable theories competing with each other and by such means, science will advance and our knowledge of the world will deepen. Outside the sphere of science, there will be the domain of understanding, where the main purpose will be to determine, by means of rightness, the functionality of various versions.

Funding

This paper has been supported by the project ZČU SGS-2017-031.

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