

# Popper's Double Standard of Scientificity in Criticizing Marxism

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Karl Popper

This paper is a consideration of Popper's criticism of Marxism in terms of the criterion of falsifiability. It attempts to show that Popper's criticism, taken together with his alternative proposal for a social science, involve an inconsistency. This inconsistency consists in the following: when Popper criticizes Marxism, he employs falsifiability as a criterion of scientificity; however, when he advocates his own version of social science and claims its scientificity, he employs a different criterion which is not as strict; thus, he ends up with a double standard — one for Marxism and one for his own theory. If this is the case, as I will attempt to show, then Popper's criticism of Marxism in terms of falsifiability fails to hit the mark and should be discarded.<sup>1</sup>

Sir Karl Popper is considered one of the most influential philosophers of science of the twentieth century. He is also known for, allegedly, providing “the most scrupulous and formidable criticism of the philosophical and historical doctrines of Marxism.”<sup>2</sup>

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<sup>1</sup> I would like to thank R. Albritton for his comments on an earlier draft of this paper.

<sup>2</sup> Berlin, I., (1939), p. 287. See also Gallie, W.B., (1964), Kemski, J. von (1960), Leff, G., (1969), who refer to Popper's criticism as “devastating.” Popper himself, modestly enough, describes his criticism as “devastating,” (1945), vol. 1, p. viii: “I felt that my criticism was devastating. . . .”

Actually it was this criticism that turned philosophical attention to his work and rescued him and his writings from oblivion. Otherwise, Popper would have remained an obscure philosopher (wrongly) identified with positivism.

Marxism, according to Popper, played a special part in his intellectual development.<sup>3</sup> In an autobiographical essay,<sup>4</sup> he recounts how he came to conceive of the concept of falsifiability as the distinguishing characteristic of science — a story that has all the ingredients of a real conversion experience. Briefly, as a young radical student, back in Vienna of the 1919, he was attracted to communism and Marxism and, for a while (two or three months), adopted the new doctrines that were promising to change the world in a scientific manner. This, however, was short-lived; political complications and intellectual doubts brought the affair to an unhappy end. Popper began to suspect that the Marxist pretensions to scientificity were simply false. At the tender age of seventeen, Popper “. . . had also actually noticed quite a bit that was wrong, in the theory as well as in the practice of communism . . .” (Popper (1974), p. 25); “I had accepted a dangerous creed uncritically, dogmatically. . . . Once I had looked at it critically, the gaps and loopholes and inconsistencies in the Marxist theory became obvious. . . . By the time I was seventeenth I had become an anti-Marxist” (ibid., p. 26).

Though by the prevailing criteria of scientificity (positivist) at the time, Marxism was scientific, Popper did not feel comfortable that Marxists could find confirming evidence of their theory everywhere. Instead, he thought that such confirmations were not the sign of a sound science; they were not the criteria to demarcate science from pseudo-science.

At about the same time, Popper was also impressed by Einstein’s theory of general relativity and the latter’s challenge to test it in the eclipse of 1919 (which the latter had successfully predicted). This was real science, Popper thought: to make a bold

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<sup>3</sup> According to Hacoen (2000), p. 439, Popper had read a fair amount of Marx’s works, and some Engels, Lenin and Stalin; he knew nothing, however, of any of the Marxist interpretative traditions. It should be noted that the “fair amount” refers to *Capital*, and excerpts from *The Communist Manifesto*, “Preface to A Critique of Political Economy,” “Address of the Central Committee to the Communist League,” “Theses on Feuerbach,” *The Poverty of Philosophy*, *The Eighteenth Brumaire of Louis Bonaparte*, and *The Civil War in France*. As regards Engels, Lenin and Stalin, he read excerpts of some of their works.

<sup>4</sup> Popper, K., (1974), pp. 3-181. See also Popper (1963), pp. 33-35; (1976), p. 37, and chs. 8,9; (1983), p. 162.

prediction and then test it to see if it is corroborated, “Here was an attitude utterly different from the dogmatic attitude of Marx . . . Einstein was looking for crucial experiments . . .” where a “. . . disagreement, *as he was the first to stress*, would show his theory to be untenable” (emphasis added); thus, he concluded, “. . . the scientific attitude was the critical attitude, which did not look for verifications but for crucial tests; tests which could refute the theory tested, though they could never establish it” (Popper (1974), p. 29).<sup>5</sup> At the age of seventeen, Popper found the answer to the demarcation problem in falsifiability, and dismissed Marxism as non-scientific.

After that short-lived affair, Popper continued to criticize Marxism, primarily in his (1944/45), (1945), vol. 2, with scattered remarks about it in his (1963), (1974), (1976), (1983), (1985). He made two charges against Marxism. The first has two aspects: 1a) Marxism consists mainly of unfalsifiable claims, Popper (1963, p. 34), (1974, pp. 984-5), (1976, p. 37), (1983, p. 174); 1b) those claims that are falsifiable have been falsified (Popper (1974, p. 33), (1963, p. 37). 2) Marxism is a historicism, Popper (1944/45), (1945).

According to 1a), Marxism does not provide statements that are testable in order to be shown true or false; and in this sense, Marxism is not scientific (because falsifiability is the criterion of scientificity). 1b) refers to Marxism’s alleged predictions regarding, for example, the revolution of the working class in the most advanced societies at the time (Europe), which never happened; in this sense, Marxism is a false science; and when Marxists were faced with this refutation of their theory, were forced to modify it by employing *ad hoc* stratagems (Popper (1974, p. 33), (1963, p. 37)), something that sciences are not supposed to do because they reduce the empirical content of the theory.<sup>6</sup>

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<sup>5</sup> It is interesting to note here that Einstein actually said that he would not have admitted as a refutation of his theory the astronomical observations he suggested even if they had gone against it; Holton (1973), p. 255, quotes Ilse Rosenthal-Schneider, a student of Einstein’s regarding the aforementioned eclipse, “When I was giving expression to my joy that the results coincided with his calculations, he said quite unmoved, ‘But I knew that the theory is correct’; and when I asked, what if there had been no confirmation of his prediction, he countered: ‘Then I would have been sorry for the dear Lord — the theory is correct.’”

<sup>6</sup> Two points are in order here: 1. strictly speaking those “predictions” are not part of historical materialism according to which historical societies are not static; they change over time; the motor of this change is class struggle which expresses the fact of exploitation and may or may not involve action at the political level. The way to periodize and detect that change is the mode of production; 2. revolutions did happen in central Europe, at the time, as Marx had expected, and which culminated in the Paris Commune; but they were brutally suppressed and thus unsuccessful.

2) refers to an approach “to the social sciences which assumes that *historical prediction* is their principle aim, and which assumes that this aim is attainable by discovering the ‘rhythms or the ‘patterns,’ the ‘laws’ or the ‘trends’ that underlie the evolution of history.”<sup>7</sup>

Marxists responded to Popper’s criticism by focusing exclusively on the second charge (historicism): Wollheim (1954), Taylor (1958), (1959), Cornforth (1968), Finocchiaro (1979), Hudelson (1980), Suchting (1972), (1985). They all attempted, with varying degrees of sophistication, to defend Marxism by pointing out Popper’s misreading of it and/or logical mistakes in his argument. Some (Hudelson) attempted to defend Marxism by accepting Popper’s criticism regarding historical materialism (as a science of history) but argued that it does not affect Marxian economics. Davison (1979) provides a critical look at the official Soviet responses to Popper according to which Popper is either (mis)identified with positivism or considered a neo-positivist, an apologist for bourgeois democracy and a propagandist of the imperialist camp. The charge, however, against Marxism as unfalsifiable and falsified was not addressed; and if falsifiability is taken to be what defines/separates a science (from a non-science) then, it is a serious charge in need of an answer.

One way to debunk Popper’s criticism of Marxism in terms of falsifiability is, of course, to debunk falsifiability as the distinguishing characteristic of science. This would require an analysis of the history of the sciences, something that has been undertaken in the mainstream philosophy of the sciences: the concept of falsifiability as a distinguishing characteristic of science, i.e., a demarcation criterion, has been the subject of intense criticism by non-Marxist philosophers of science, Kuhn, Feyerabend, Lakatos, to name only the best known, who argued, based on an analysis of historical episodes in science, that history falsifies falsifiability. This criticism could have been even more successful had it been accompanied by an alternative theory of science and a view of how science changes rationally in history. However, Kuhn and Feyerabend failed to rationally account for such changes (they conceived them in irrational terms subject to politics, rhetoric and propaganda and this led to relativism); Lakatos reintroduced inductivism in

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<sup>7</sup> Popper (1944/45), p. 3.

order to account for them (a method that had already been found suspect). And despite their devastating criticism of Popper's falsifiability, the issue remained open; the debates focused on the shortcomings of the alternative theories ("incommensurability" (Kuhn), "anything goes" (Feyerabend), "a whiff of inductivism" (Lakatos)) and not on the shortcomings of Popper's criterion. It is not surprising then to see Popperians of different shades such as Magee (1985, pp. 43, 44), Notturmo (2000, p. 260, who quotes Popper approvingly), repeat the charges of unfalsifiability and falsification against Marxism.

Another way to debunk Popper's criticism of Marxism in terms of falsifiability, and put the matter to rest, is to examine his writings and see how consistent he is in using this principle when it comes to his own version of social science; that is, by taking Popper's own criterion and applying it to his work on social science; by entering the opponent's territory and showing any internal inconsistencies, if there are any, in Popper's argument. This move could potentially invalidate Popper's critique of Marxism in terms of falsifiability. What follows is such an examination.

When Popper published his *magnum opus*,<sup>8</sup> positivism was the dominant philosophy of science. Positivism was an attempt to answer Hume who, an empiricist himself, had criticized the methodology (inductive method) classical empiricism employed in order to show how we arrive at scientific laws. According to this method, one is justified, under certain conditions, in generalizing from a finite number of observation statements to a universal statement, i.e., "all swans are white." Hume,<sup>9</sup> however, showed that, contrary to the requirements of the system, the universal law that we reach through inductivism is not based on experience; it asserts something that has not been experienced as yet. Therefore, there is no rational justification of accepting universal laws in terms of induction.

Positivism followed in the footsteps of classical empiricism claiming that sense experience is the way to genuine knowledge; but, at the same time, it accepted Hume's criticism of inductivism. To avoid the problem of induction, positivism switched attention from the way universal laws are formulated to the way they are justified by emphasizing logical analysis: it does not matter how universal laws are formulated; but

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<sup>8</sup> Popper (1934).

<sup>9</sup> Hume (1748), (1739).

once such laws are reached, the point is to render them in such a way that they can be examined against reality.<sup>10</sup> In this view, science is a deductive formal system, symbolized in the language of logic that takes on an empirical meaning by definitions that relate the terms of the formal language with observables in the external world. If the terms relate to reality (i.e., this is it!), they are verified and scientific; if not, falsified and meaningless. However, verification broke down and attempts to save it by arguing that knowledge, though not certain, is probable, failed too.<sup>11</sup> The downfall of positivism can be attributed, in a small part, to Popper, who mounted a vigorous criticism against it (Popper (1934)).<sup>12</sup>

Popper accepted Hume's criticism as well, but thought that verification is impossible because there is no theory-independent observation.<sup>13</sup> If the goal of science is truth<sup>14</sup> then, the focus should be on truth and the method that helps attain it. This method is conjecture-and-refutation; and it is based on rejection and not on acceptance as a way to scientific knowledge. For positivism, a theory is accepted as scientific if, and only if, it is confirmed. For Popper, on the other hand, the passing of tests does not make any

<sup>10</sup> Neurath (1973).

<sup>11</sup> There are two sets of problems associated with positivism: a) regarding the distinction between theoretical vs. observation terms which, it has been shown, is impossible to maintain — see Achinstein (1968), chs. 5-6; Chalmers (1982), ch. 3; Feyerabend (1988), chs. 6-7-14; Kordig (1971), ch. 1; Kuhn (1962), ch. 10; Newton-Smith (1981), ch. 2; Popper (1934), ch. 5, Appendix 10; Popper (1972), pp. 341-61; Suppe (1974), Introduction, sections II-IV; b) regarding the distinction between context of discovery vs. context of justification which, it has been argued, is impossible to maintain — see Amsterdamski (1975), pp. 52-66; Feyerabend (1988), ch. 14; Fleck (1935), pp. 20-23; Hoyningen-Huene (1987), pp. 507-8; Kordig (1978), pp. 114-6; Kuhn (1962), pp. 8-9, ch. 10; Kuhn (1977), pp. 326-7; Nicles 1980), pp. 13, 28-25. For problems associated with probability, see Chalmers (1982), pp. 17-9; Musgrave (1993), pp. 161-6; Popper (1934), Appendix VII.

<sup>12</sup> Popper never shied away from assuming responsibility for the consequences of his actions; in a crisis of modesty, he claimed that “Everybody knows now-days that logical positivism is dead. . . .” Who is responsible?” . . . “Who has done it?” . . . I fear that I must admit responsibility,” Popper (1974), p. 69. Kuhn, in my opinion, should be considered the one who sealed the fate of positivism in the field of philosophy of science. As regards the (social) sciences per se, positivism is still alive and kicking.

<sup>13</sup> Popper (1963), pp. 46-7.

<sup>14</sup> Popper lists several goals of science:

- a) true explanatory theories (Popper (1934), p. 61 footnote\*)
- b) true theories with a high degree of explanatory power (Popper (1963), p. 229; Popper (1972), p. 191)
- c) falsifiable statements (Popper (1934), p. 49)
- d) explanatory theories with a high degree of testability (Popper (1972), pp. 193, 356)
- e) theories with a high degree of verisimilitude (Popper (1972), p. 57).

We should note that e) contradicts a) and b) since verisimilitude holds, as we shall see, between false theories. If we discard e) for now, and we will have reasons to do that, then we should take it that the goal of science is truth since a), b), c), d) are the same.

difference regarding the status of a theory or hypothesis. What makes the difference is the failing of any of the tests: refutation or falsification is the only means Popper allows for the control of scientific knowledge. This essential qualification is Popper's criterion of the demarcation between science and non-science. Popper's solution to the problem of demarcation is to show that a true science is vulnerable to falsification. In other words, generalisations, laws, theories, though not verifiable are falsifiable. Their strength is not in being provable, but testable; they can be, and should be tested by systematic attempts to refute them (Marxism is being criticized by Popper for, allegedly, failing to provide such falsifiable laws — the first aspect of the first charge). If a universal statement fails a test, it is refuted, falsified, and, thus, removed from the present corpus of science and placed in the history of science. If it passes all the tests, it is corroborated and retained.

Popper also accepted the deductive method as a means of testing theories. Deductive arguments compel us to choose between the truth of their conclusions and the falsity of their premises. This, in itself, does not show that a theory is true or false. But if the argument is deductively valid, then we simply cannot deny, without contradiction, the conclusion unless we deny its premises. In this way, deductive arguments help us exercise control over knowledge.

Deductive arguments have two parts: a) the universal statement or law, the explicandum; b) the initial conditions, what is to be explained, the explanans. I am going to sketch the elements of deductive logic:

Example: universal law — all metals expand when heated

Initial conditions — this wire is made of metal

— this wire is heated

Conclusion — this wire expanded

If the conclusion is different from the general law, it contradicts it and we have to change the general law: any confrontation between a general statement and reality is a duel where only reality triumphs. This rough outline does not do justice to Popper's theory of science which, apart from this logical form of a statement, includes a methodological aspect as well; it just presents the core of his view which is the notion of testability or falsifiability or refutability as the criterion that separates science from non-science, and is what concerns us here.

To put it in a nutshell, Popper's alternative is that science=falsifiability; and it should be sought not in justification but in refutation. If science is about true explanation, explanations require general statements that, in order to be scientific, must survive severe empirical tests; if they do not survive, they are removed and replaced by others. This theory of Popper's comes exclusively from a consideration of the natural sciences. However, when Popper tries to apply it to the social sciences, he comes up with some rather surprising results.

Popper's writings on the social sciences comprise only a small fraction of his output (1994), (1985), (1976a), (1944/45), (1945). His intention is to distinguish between "good" and "bad" social science because there is a practical issue that ". . . the social problems of our time are urgent and that philosophers ought to face the issues; that we should not be content to interpret the world but should help to change it."<sup>15</sup> In his work on the social sciences, Popper draws attention to a doctrine which he calls "historicist" and which had become dominant, at the time, in Europe, in politics and philosophy. After criticising the "historicist" doctrines, he proposes his own approach to social science.<sup>16</sup> His method for the social sciences is what he terms "situational analysis." For Popper, social explanations should be given in terms of the situation the agents find themselves in. Given the objective situation, there will be a unique action, which follows naturally from the "logic" of the situation. The resulting action is called a rational response to the objective situational environment in which the agent found him/herself. Such explanations should be accompanied by a "Rationality Principle" (henceforth, R.P.) which states that agents act in a way appropriate to the situation.<sup>17</sup>

The R.P. that Popper employs in his "situational analysis" raises a number of questions because it is difficult to see what exactly Popper's view of it is. The clearest exposition of it is the "The Rationality Principle" in his (1985). Here Popper raises some important questions regarding the R.P.: is it true or false? Is it falsifiable? Can it be

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<sup>15</sup> Popper (1963), p. 337.

<sup>16</sup> The charge of "historicism" has been sufficiently taken care of by Marxists especially Wollheim (1954), Suchting (1972), (1985).

<sup>17</sup> Popper (1985), p. 358.



replaced if falsified? However, on all those questions, Popper's answers are not very clear and, at times, they create ambiguities.

Popper employs the same deductive schema of explanation in the social sciences that he employs in the natural sciences: the explanans form the antecedent, while the explanandum the consequent, where the validity of an inference depends on the truth of all statements; in other words, explanations in the social sciences, for Popper, have the same nomological causality as in the natural sciences: "I am going to propose a doctrine of the unity of method; that is to say, the view that all theoretical or generalizing sciences make use of the same method, whether they are natural sciences or social sciences . . . the methods always consist in offering deductive causal explanations, and in testing them. . . ." <sup>18</sup> The "unity-of-method" thesis is essential to Popper because his motivation to provide a demarcation criterion in terms of testability, that is, falsifiability, is to develop a theory of science designed specifically to exclude Marxism from the corpus of science. If there is no unity-of-method, his critique of Marxism fails to hit the mark.

According to Popper, "situational analysis," which is his approach to the social sciences, requires a model and a law. A model is composed of four elements <sup>19</sup>: a) a physical element; b) a social element; c) the agent's goals and aims; d) the agent's knowledge of the situation. The first two elements are objective, referring to physical and social constraints; the other two are subjective, the agent's knowledge and beliefs. The law that animates the model is the R.P., according to which, agents act appropriately to the situation. At first sight, this deductive schema is very similar, in its logical structure, to the one in the natural sciences: both involve a law (the R.P. in the social sciences) and some initial conditions (natural sciences) or model (social sciences) and attempt to account/explain for a natural or social event.

However, there is a difference between the two schemata, which is a crucial one. Though the logical structure of both schemata is symmetrical, there is an asymmetry involved which changes everything: in the natural sciences deductive schema, the law, which is the theory, is the one that must be testable, that is, falsifiable, in order to be scientific: if corroborated, it stands; if contradicted, falsified and removed (Marxism is

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<sup>18</sup> Popper (1944/45), pp. 130-1; see also, (1945), p. 286, (1976a), (1963), pp. 336-46.

<sup>19</sup> Matzner and Jarvie (1998).

being criticized by Popper because its laws have been, allegedly, contradicted/falsified, and, thus, the theory must be removed from the corpus of science — the second aspect of the first charge). In the social sciences deductive schema, what is testable is not the law, the R.P., but the model (the initial conditions in the natural science schema),<sup>20</sup>

The adoption of the rationality principle . . . does not play the role of an empirical explanatory theory, of a testable hypothesis. For in this field, the empirical explanatory theories or hypotheses are our various models, our various situational analyses. It is these which may be empirically more or less adequate; which may be discussed and criticized, and whose adequacy may sometimes even be tested. And it is our analysis of a concrete empirical situation which may fail some empirical test, thereby enabling us to learn from our mistakes.

Though Popper argues that both deductive schemata must involve a falsificationist methodology (unity-of-method thesis), there is an important difference as to what is supposed to be testable, falsifiable. This difference is connected with the status of the R.P.: is the R.P. nomological, that is, does it have the status of an empirical law or not? If it does not have this status, then there would be no real explanations because a legitimate explanation must have the form of a valid inference that involves true propositions.

What Popper says regarding the status of the R.P. is not very clear; actually, at times, it is confusing. For example, at one point, he claims that the R.P. is a) “an almost empty principle”<sup>21</sup> and that it should not be regarded as an empirical or psychological assertion that a wo/man acts always rationally. And, then, he adds that b) the R.P. is both “clearly false,” and that, though false, it is “a good approximation to the truth”<sup>22</sup> ( b) contradicts a) for if it is false it cannot be empty; it has a content that is false). In other words, Popper’s scheme of social science involves a law, the R.P, which is both non-testable, therefore not amenable to falsifiability, and false (it has been falsified); yet, he claims that this is the way to go about it. This indicates a different conception of

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<sup>20</sup> Popper (1985), p. 360.

<sup>21</sup> Popper (1985), p. 359.

<sup>22</sup> Popper (1985), pp. 361, 362.

science<sup>23</sup> since it blatantly contradicts what he has been preaching all along, the gospel of falsifiability and falsification (Marxism is dismissed along these lines); it also contradicts the unity-of-method thesis.

Popper saw the contradiction and made an attempt at resolving it. He tried to bypass this problem by employing a move that affects the goal of science. By this, he tried to achieve several things with one stroke:

- a) maintain the unity-of-method thesis
- b) maintain falsifiability as the criterion of science
- c) maintain his criticism of Marxism
- d) argue for the scientificity of his own version of social science as an alternative to Marxism.

The move that he employs is to change the goal of science: from truth to verisimilitude. This latter concept, Popper takes over from Tarski and modifies it:<sup>24</sup>

To say that the aim of science is verisimilitude has a considerable advantage over the perhaps simpler formulation that the aim of science is truth. . . . Thus the search for verisimilitude is a clearer and a more realistic aim than the search for truth.

In other words, given two competing theories, we choose the one that is closer to truth than the other. But how does verisimilitude work? His basic definition of it relies on the notion of the content  $A$  of a theory, which is the set of all statements that are derivable from that theory. This content is further subdivided into two classes:  $A_T$ , which is the set of all the statements that are true;  $A_F$ , which is the set of all the statements which are

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<sup>23</sup> That there are two different notions of science in Popper's writings has been noticed by at least the following authors, none of whom, however, draw the consequences these have on his criticism of Marxism: Berkson and Wettersten (1984), Wettersten (1992), Hacoen (2000) argue that Popper provides two notions of scientificity, falsifiability and criticizability, without, however, addressing the structural asymmetry in the deductive arguments. Caldwell (1991), Hands (1991), Koertge (1979), talk about the dissimilarities between Popper's treatment of the natural and social sciences due to the asymmetry that is involved without, however, claiming that there are two notions of science at play. Latsis (1983), Nadeau (1993) allude to this difference but it is never made explicit; they deal with problems associated with the "Rationality Principle."

<sup>24</sup> Popper (1972), p. 57.

false. Popper's definition of verisimilitude is as follows: suppose we have two competing theories  $T_1$  and  $T_2$ ; suppose also that each one makes twenty empirical assertions; furthermore, suppose that  $T_1$  makes twelve assertions that are true and eight that are false; and,  $T_2$  makes fifteen assertions that are true and five that are false. In this case, we say that  $T_2$  has more verisimilitude than  $T_1$  because the truth content of  $T_2$  is greater than  $T_1$  (or, because the falsity content of  $T_1$  is greater than the falsity content of  $T_2$ ).

This notion of verisimilitude, he hoped, could serve his purpose: deductivism and falsifiability are maintained while, it was hoped to be shown, his "situational analysis," though based on a false law, was closer to truth than Marxism, so his criticism of it could stand as well. However, the concept of verisimilitude failed: Popper was forced to withdraw his theory of verisimilitude as wrong, as he himself admitted, (Popper (1983, p.p. xxxv-xxvi)), after it was severely criticised.<sup>25</sup> The problem is that there is no viable way to compare theories in terms of their contents because scientific theories contain an infinite number of assertions, and no-one, so far, has been able to devise measurements for assigning sizes to infinite sets of assertions, something that is required if we are to compare theories in terms of their contents.<sup>26</sup> Even if there was to be a viable theory of verisimilitude, the R.P. would have to be tested to show that it is closer to truth than, say, Marxist laws. This, however, is precluded since the R.P., according to Popper, cannot be tested.

Despite the inconsistency in his argument, Popper never withdrew his charge against Marxism in terms of falsifiability and continued to support his "situational analysis" as the only social science; his disciples continue to do the same.

As it becomes obvious from the above, Popper employs two different notions of science which are applied at will on two competing theories. According to the first notion, science=falsifiability; this notion is applied to Marxism in order to disqualify it as science. According to the second notion, science≠falsifiability (since verisimilitude breaks down and cannot play the role Popper hoped it would); this is applied to Popper's own version of social science in order to qualify it as scientific. In other words, for his

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<sup>25</sup> For the refutation of Popper's verisimilitude, the interested reader may take a look at Miller (1974), Tichy (1974), Harris (1974), Haack (1976), Anderson (1976), Oddie (1986) and Newton-Smith (1981).

<sup>26</sup> Newton-Smith (1981).

version of social science (“situational analysis”), Popper employs a principle (i.e., a law), the R.P., that is either false (falsified, as Popper himself admits, note 18) or non-testable (unfalsifiable, note 16). This involves a double contradiction that amounts to a double standard: on the one hand, Popper’s “situational analysis” contradicts his falsifiability principle and his deductivism (his scheme require a falsifiable law which, if falsified, should be removed and replaced); on the other, it contradicts his criticism of Marxism (he applies falsifiability on Marxism but not on his “situational analysis”). To put it in another way, Popper’s version of social science, “situational analysis,” which he takes to be the only method appropriate for the social sciences (Popper (1985), p. 358), involves a law, the R.P., that is non-testable, i.e., unfalsifiable, and false; yet, he claims its scientificity. At the same time, he accuses Marxism of being non-scientific because it involves laws that are mostly unfalsifiable, while those laws that are falsifiable have been falsified. This double standard of scientificity in criticizing Marxism, I think, is sufficient ground to invalidate his criticism in terms of falsifiability.

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