

***Communist revolution and human emancipation: scientific
inevitability or utopian dream?
Why must we re-examine this question?***

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1. In the 20th century, communists wrenched great victories out of the horrors of each world war: the Bolshevik revolution in the aftermath of World War I, the Chinese revolution through the course of World War II. By the closing years of the 1960s, the world seemed to brim with the immanent possibility of imperialism's defeat and the victory of socialism in many oppressed countries around the world, perhaps even in one or more of the imperialist countries. But these hopes turned out to be naïve. Instead, as the 21st century opens, the world is more thoroughly dominated by imperialism, more tightly integrated into one subservient system, than ever before. Today, the U.S. eagle spreads its wings over the entire earth, screeching "Communism is dead!" The global assembly line transforms the life blood of workers from the shantytowns of the planet into a seemingly unending stream of imperialist superprofits. The U.S. war machine, the most massive the world has ever known, rains death and destruction on Afghanistan and Iraq, and threatens more of the same for any others who dare to obstruct its total hegemony.

2. How did this happen? Wasn't the triumph of communism over capitalism supposed to be inevitable? Is the dream of ending the imperialist night an impossible one? Is this really—as the capitalists would have us believe—the essential lesson of the 20th century? Where are the rebellious proletarian masses, the "gravediggers of capitalism"? Why are they not busy with their shovels? Why do so many who suffer from U.S. imperialism fall under the influence of fundamentalist—and capitalist—Islam, ready to die as suicide bombers, rather than raise the banner of proletarian revolution? Why have socialist experiments spawned ponderous, top-heavy bureaucracies that have substituted new class systems for old—making a mockery of the proletarian transformation of society? In the face of all of this, should we cling to the inevitability of communism like Catholics clutching rosaries? If communism is not inevitable, is communist struggle merely a subjective matter of refusing to give in—of holding our heads high to serve as examples to future generations as we chase the holy grail of classless society? Or, is the term "scientific inevitability," along with science itself, merely a "totalizing" claim of Western or "white" hegemony—as various nationalist, "3rd worldist," "post-modern" and religious groups claim?

3. So many interrelated questions confront us at the dawn of the 21st century. These questions are urgent, for even as the United States bullies the world with seeming impunity, the possibility of its empire unraveling through an economic and political meltdown of global proportions shimmers tantalizingly on the horizon. However, it would be premature to attempt answers before directly addressing the issue of the inevitability of communism. This once cherished belief of revolutionaries the world over has now been thrown into doubt by the ability of capitalism to regenerate itself despite repeated paroxysms. Communism exists—if at all—as a distant, utopian dream for those who were once ready to

lay down their lives to hasten the achievement of that goal. What replaced it was a sense of the inevitability of capitalism's recovery from its recurring crises, often accompanied by the remark, "Revolution? Not in my lifetime!" Few now care to talk about it, but it must be confronted. Is there a scientific meaning for the term "inevitability of communism"? Is its scientific meaning different from the naïve view that capitalism, or its incarnation as imperialism, will simply topple over by its sheer weight—through "imperialist overstretch"—that all we really need to do is wait? Is there some kind of predetermined path to communism? What is the role of chance? In fact, what are the defining characteristics of communism—are these linked to the concept of inevitability?

4. The scientific nature of Marxism was accepted axiomatically within the communist movement during much of the 20th century. But what does this mean? Is it true or not? Over the last hundred and fifty years, the communist movement has repeatedly lost its mooring to the *science* of Marxism, at times floating off almost imperceptibly, treating communism as a religion—holding some of its major tenets fervently, like cherished dogma—but then, when confronted with urgent problems, throwing principle overboard in pragmatic pursuit of whatever, in a given situation, "seems to work." Without fanfare, Stalin dropped the law of the negation of the negation after 1938.¹ Mao had also quietly dropped this law by the time he was conducting classes in Marxist philosophy in Yen-an and writing his essays, *On Contradiction* and *On Practice*.² There was no examination of the implications of this omission, no investigation of the fact that negation is the motor of change, that the negation of the negation is the expression of necessity within materialist dialectics and is, therefore, also the basis of the claim of the inevitability of communism. However, though the *claim* of inevitability was not dropped by Stalin, Mao or the Third International, the *method* by which Marx drew the conclusion was forgotten. That Marx repeatedly linked the emergence of communism to the negation of the negation seems to have made little impact on communist leadership after Lenin.³ The abandonment of this law of materialist dialectics reduced the inevitability of communism from the level of a scientific statement to that of a utopian dream. Science—who needs it?

5. No political movement, regardless of its intentions, can transform the world in a way that shatters the chains of class society and clears the road to communism without the methodology—the philosophy—needed to understand the dynamics of society. The revolutionary advances we have achieved—and they have been great achievements, however temporary—have only been gained through our grasp of materialist dialectics (however intuitive or incomplete), in combat against all forms of bourgeois philosophy. Minimizing the philosophical struggle, even denying its importance altogether, implicitly or explicitly, is one form in which pragmatism—the philosophical outlook of the U.S. bourgeoisie—has infected the communist movement through the course of the 20th century. How often have we succumbed to the will-o'-the-wisp of painless progress, giving up on our long-term goal of communism, in exchange for seemingly "more practical," "realistic," "immediately achievable" goals? With such an orientation, how will the proletariat ever get out from under the rock of bourgeois domination and "master," as Mao put it, "every sphere of society?"

6. It is the claim of this article that communism is a scientific inevitability—the negation of the negation in the working out of the fundamental contradiction of capitalism—not the utopian dream that it was inadvertently reduced to by Stalin and Mao. Mao deserves special attention here because he went further than Stalin, openly attacking the negation of the negation in 1964.⁴ But to understand the issues involved, we must fight our way out of the labyrinth of blind alleys and dead-ends we unwittingly traveled during the 20th century, reclaim the scientific heritage bequeathed to us by Karl Marx and build on it.

I. SCIENCE AND MARXISM

1. THE NATURE OF SCIENTIFIC LAWS

7. The substance of science involves abstractions—theories, models, experiments and laws of nature and society.⁵ We construct models and theories to express aspects of reality and then use them to predict the results of experiments. In such constructions, we abstract away from the surface appearances of phenomena, which conceal what is essential.

8. A *scientific law* is a general statement that sums up observations of repeated events; events that *always occur when certain conditions are met*, and, hence, are *repeatable if and only if the conditions are repeatable*. For example,

9. Whenever an object near the surface of the earth falls freely (and all effects are negligible, other than that due to the gravitational force of the earth on the object), its acceleration is $g = 9.8 \text{ m/s}^2$

10. Laws *are always conditioned and are inseparable from the conditions*, though for brevity, we often omit stating the conditions if no confusion arises. In the example above, the statement enclosed by the parentheses is seldom included, although it is very crucial to the statement of the law. In fact, in repeating an experiment that tests a law, meeting the conditions and stabilizing them is the heart of matter.

11. The inevitability of communism—*like any scientific law*—was never meant to be some kind of unconditioned absolute; it can only be true in a *conditional* sense. It was never a call for inaction—however long it takes communist forces to break with bourgeois philosophy, especially pragmatism, and consistently use the science of Marxism to guide our actions, for that length of time will the birth of communism be delayed. Should humanity be destroyed by an asteroid, a nuclear holocaust or a runaway-greenhouse effect, then, obviously, communism is not inevitable. Communism is inevitable *only* under conditions that permit the contradictions driving capitalist society to reach their resolution.

2. THE TENDENTIAL CHARACTER OF SCIENTIFIC LAWS—IN LIGHT OF HERACLITUS

12. Lenin's summation of Hegel's discussion of the nature of scientific laws is appropriate: "every law...is narrow, incomplete, approximate."⁶ Why this is the case is explained by the very meaning of the concept of scientific law, namely, a summation of the results of repeated events. This is a very abstract notion that seems to contradict the way the world really is. After all, in an ever-changing world, as Heraclitus said more than two thousand

years ago, “You cannot step into the same river twice.” Strictly speaking, there are no such things as “repeated events.” How, then, can there ever be scientific laws?

13. The point is that *scientific laws are not about the behavior of real objects!* Scientific laws are about abstractions, about universals that cannot exist, in and of themselves, but can only exist as embodied in individual things. When we count apples, we ignore their differences and perceive only the universal “apple” in them. We pretend, for the purposes of the count, that they are absolutely identical. But individual macroscopic things are never exactly identical and are incessantly in transition—apples rot or sprout new trees when left to themselves. Consequently, as Heraclitus says, it is impossible to repeat an event involving real things. Scientific laws involve abstracting away from processes undergone by real objects. It is the properties and the behavior of universals that are the subjects of scientific laws, not the properties and the behavior of individual things and processes. Repeated events can occur only on the abstract level of universals, not on the level of individual things. Also, the presence of a set of qualities or processes in a thing depends on the conditions to which it is subjected and the lawful behavior is pertinent only to the given conditions. Boiling an egg sets into motion a different process in the egg from that set in motion by a hen sitting on a fertilized egg.

14. For these reasons, any law is *inherently narrow* and *inherently incomplete*. And for these very same reasons, processes in reality will only exhibit a *tendency* to follow an underlying scientific law—the real things in real processes are only approximated by the conceptual objects that appear in the law, and cannot behave exactly as the conceptual objects do. The inevitability of communism can only be a tendential law; like any other scientific law. Engels made this point in describing the operation of economic laws but it is true about scientific laws in general:

15. [N]one of them has any reality except as approximation, tendency, average, & not as immediate reality. This is due partly to the fact that their action clashes with the simultaneous action of other laws, but partly to their own nature as concepts.⁷

16. The second part of Engels’s remark, the impact of the action of a law “clash[ing] with the simultaneous action of other laws” will be elaborated on later, in the discussion of the role of randomness.

3. THE NATURE OF SCIENTIFIC THEORY

17. Theory begins with the perception of the universals residing in particulars; it begins when we interact with, transform or observe the things and processes of the world, and perceive that a certain “something” is significant (rightly or wrongly). After many instances of encountering that “something,” we abstract or distill out a universal that is common to all those instances and is different from other universals. Our minds mirror that “something” in the world through a universal. We build models of actual things and processes in our minds, creating signs, symbols and pictures in our heads corresponding to that “something.”

18. What we model are only *certain* aspects of those actualities; we *abstract*, distill out something essential, we *coarsen* and *deaden* reality in our models in order to highlight what is most important to the way a process works. Because “[t]he representation of movement

by means of thought” must necessarily coarsen and immobilize reality, dialectics becomes necessary if reality is to be grasped in its fullness, its dynamism.⁸ We use our mental images and models to create entirely new things in the world. We grasp the world in our minds through a network of interlinked universals and build theories and models of all the aspects of the world that come within our purview. Through a long historic and collective process of trial and error, we learn that certain universals are more important than others in the functioning of particular things and processes. In the final analysis, this process is what is at the heart of scientific theory, no more and no less.

19. Though universals do not, in and of themselves, have independent existence, apart from individual things, it would be foolish to deny their existence. As fantastic as these universals are, we need them to grasp reality, to understand the world. They are crucial to our survival and development, to our attempts to transform the world so that it can become a more favorable place for conscious beings to develop, to interact more and more consciously with nature and each other.

20. The process of abstraction, of forming concepts, is necessary to grasping reality but, at the same time, can only be a more or less coarse-grained modeling of reality. New aspects of anything and everything are to be expected. In science, we constantly seek new models that are as comprehensive as possible and strive for our models to embrace the full richness of our collective experiments. We deliberately commit ourselves to the development of an integrated understanding of the universe, to view it with eyes that are ever fresh and yet informed by the continuing accumulation of human knowledge. This process of modeling, of continually amending and refining our approximations, leads on to higher levels of thought and action. Integration of our models eventually transforms them into something else—*theory*.

21. A theory knits together into a cohesive whole the partial explanations contained in a wide range of models. It encompasses and is supported by a wide range of experiments. The theory of evolution draws direct support from spheres of experimentation and observation as diverse as taxonomy, paleontology, biochemistry and genetics. It derives indirect support from fields such as astronomy and geology in which the general picture of an evolving universe and an evolving earth, respectively, provide the most cogent integration of a wide range of information. Particle physics also lends indirect support to the evolutionary paradigm, in close connection with astrophysics.

22. Materialist dialectics, when applied to the development of society, gives a materialist conception of history, *historical materialism*, which has as a central conclusion that communism is inevitable under conditions that permit the contradictions driving capitalist society to reach their resolution. Historical materialism is a cohesive, integrated, causal framework for understanding nature, society and thought. It knits together into a cohesive whole a scientific theory of the development of society from the period of primitive communalism to present-day imperialism. It explains the main features of the development of social formations in terms of the contradiction between the forces of production and the relations of production, on the one hand, and, on the other hand, the contradiction between the economic base and the superstructure—a complex consisting of political, legal, social, and cultural aspects of society.⁹ While historical materialism draws its support from data on

an array of human social formations and models of their development, its philosophical underpinning is materialist dialectics, which draws its support from studies of nature, society and thought.

23. Marx's *Capital* is an historically groundbreaking study of capitalist society, a central work in the foundation of the science of Marxism. It lays bare the essential exploitative character of this society that is hidden under democratic illusions of "fair exchange" and "the rights of man." The exploitative relations among people are masked by the value relations among commodities (commodity fetishism).¹⁰

24. In capitalist society, production is social in two ways. Most importantly, there is a society-wide division of labor; workers do not produce commodities primarily for the personal use of their own families but rather for the use of others in society. In the world of the 21st century, social production is global in scope. Secondly, production is social in that workers are typically gathered together to work cooperatively in a complex process, possibly under a single roof or within a single enterprise. In order to survive, the working class must sell its labor power to the capitalist class, which owns the means of production. Marx's *Capital* reveals the fundamental contradiction driving capitalism: the working class produces surplus value socially which the capitalist class then appropriates. This contradiction is summarized as socialized production v. private appropriation. But *Capital* also reveals capitalist society to be merely one phase in the history of production and not the pinnacle of human development. Capitalism must eventually give way to communism, should conditions permit the working out of the fundamental contradiction of capitalism (which will be elaborated on in section 3):¹¹

25. The monopoly of capital becomes a fetter upon the mode of production, which has sprung up and flourished along with, and under it. Centralization of the means of production and socialization of labor at last reach a point where they become incompatible with their capitalist integument. This integument is burst asunder. The knell of capitalist private property sounds. The expropriators are expropriated.

26. As Engels comments, "These two great discoveries, the materialistic conception of history and the revelation of the secret of capitalistic production through surplus value, we owe to Marx. With these discoveries socialism became a science."¹²

4. MATERIALIST DIALECTICS AS A CAUSAL FRAMEWORK

27. Materialist dialectics is a conceptual framework for grasping how things work—cause and effect—in the real world. It is opposed to a linear view of cause and effect. It resembles the natural sciences more than it does philosophy, as that field is usually understood. We focus on physics in considering this question because among all the natural sciences, it has a richness of nested causal frameworks that offer lessons on this subject. Physics and materialist dialectics share a deep affinity in that for both, the causal framework is so close to the surface of thought.¹³

28. What constitutes a framework for the analysis of cause and effect in nature is best explained by way of an example. A classic case in the natural sciences is Newton's 2nd law of motion: *the net external force on an object is equal to the rate of change of its momentum*. This is the basic form of dynamics in Newtonian mechanics. This law is often

presented as though we know forces independently of changes of momenta and the changes of momenta of an object are conceptualized as being caused by forces. If the law gives a valid summation of data on the momentum of the object at any time, then it is said to be valid.

29. It is often said that a force is a push or a pull but this is a colloquial way of “defining” force, useful for the novice. In scientific studies, however, this is not actually the way that forces are defined. We say that planets orbit the Sun *because* of the gravitational force exerted by the Sun. How is the gravitational force defined, detected and measured? Essentially, in the final analysis, by the rate of change of the momentum! In other words, there is a bit of circularity going on here, though not complete circularity. There is genuine, non-tautological content because it is not trivial to fit data using the framework of Newtonian mechanics. Newton’s law of universal gravitation—the force between two objects is proportional to their masses and inversely proportional to the square of the distance between them—though originally inspired by Kepler’s empirical laws of planetary motion, goes beyond them, explaining the motion of the planets on a level of detail far surpassing the limit of validity of Kepler’s laws. Inserted into Newton’s 2nd law of motion, Newton’s formula for the gravitational force is applicable to a wide range of gravitational phenomena that neither Newton or Kepler could foresee.

30. Newton’s 2nd law is an essential part of a framework by which causation is understood in classical physics. The framework says that understanding a process means causality is to be cast in terms of (external) forces. When forces can be conceived so as to “explain” the data using Newton’s laws of motion, then the phenomenon is said to be “understood.”¹⁴

31. Special relativity prescribes a different framework by which causation is understood.¹⁵ Already, within classical physics informed by special relativity, the concept of force in the Newtonian scheme becomes inadequate. Causation in special relativity virtually demands the concept of fields and the dynamics of fields is far more complicated than can be embraced by the concept of force.¹⁶ In the framework of general relativity, the concept of force must finally be given up completely; causation is conceptualized in terms of the curvature of space-time, which is a field concept.

32. In Newtonian physics, causation is deterministic in the sense that the state of the system is completely fixed by the initial state and the forces acting on the system. In quantum theory, causation is deterministic in the sense that the *probability* of the state of a system is completely fixed by the initial state and the forces acting on the system. Also, the objects expressing the effects are conceptualized in a totally different way than in Newtonian physics. The quantum objects are states of a system of particles which resemble the states of Newtonian continuous media. In all of these examples, the framework describes the *nature* of the causative agent and the *nature* of the conceptual elements expressing the effect. These conceptual elements are not defined independently of the particular class of phenomena studied.

33. The framework of materialist dialectics is needed to fully understand causation in *any* process, to grasp matter in its motion. In the applications of Newton’s laws of motion or the dynamics of field physics, whether they are relativistic or nonrelativistic, the role of

contradictions in driving processes is present in the mechanical motion of the physical quantities that these laws apply to.¹⁷

5. RANDOM FLUCTUATIONS AND ALTERNATE PATHWAYS

34. In any natural scientific study, elements of nature are molded, shaped or simply selected, and allowed to interact so as to approximate a set of ideals hypothesized to be the essential elements of a process. In the simplest experiments, mechanical experiments in physics, such as the study of the acceleration of objects in the gravitational field of the Earth near its surface—dropping a thing and measuring its position and speed at various times while it falls—relatively dense objects that are unaffected by air resistance over short distances (to a high degree of precision) are used in the experiment. A flat sheet of paper is relatively less useful than paper crumpled into a ball; a steel ball is even better. For small objects such as a feather, it is possible to do the experiment in a relative vacuum. The point is to create an approximation to the ideal of the gravitational attraction between the object and the Earth being the sole causal element in the process. In materialist dialectical terms, this ideal process is governed by the contradiction of the opposites, the gravitational potential energy and the kinetic energy of the object.

35. But ideals, universals, do not exist in and of themselves; a thing or process governed by a single contradiction does not exist. The best that can be done is to find various ways to mute the influence of all other contradictions other than the one that is of interest. The mechanism that releases the falling object cannot do so instantaneously; likewise, the instrument used to measure its time of flight over a given distance does not detect *exactly* when the object has landed. The distance the object falls is not defined with *infinite* precision. The many contradictions in existence, besides the one of immediate interest, inevitably assert themselves and introduce *experimental error*, not in the sense of blunder or mistake, but in the *scientific* sense—the presence of unavoidable randomness. That is the essential reason why repeated runs of any experiment are necessary. In fact, it would be shocking if in each run, the ball followed *exactly* the same path. We must then take into account those factors that “muddy the waters” and cause deviations from what is essential. This is *always* the case, for no matter how large a portion of reality is selected for study and how many contradictions are taken into account, there are always more contradictions outside of this context that interact with and exert their influence on the chosen context; experimental error is a permanent fact in science. This does not disprove the existence of laws and necessities of nature, but it denies the existence of absolutely predetermined behavior and fixed pathways of development.¹⁸ Therefore the inevitability of communism must not be interpreted narrowly in terms of a lock-step, straight-line development from capitalism to communism. In complex fields of study such as political economy, paleontology, geology, evolution of species, evolution of astronomical objects, etc., *the impact of an infinity of contradictions on a process converts the functioning of all laws into tendencies, contingent on the mutual interaction of the significant sub-processes.*

6. CHAOS THEORY AND THE CONCEPT OF TENDENTIAL LAWS

36. Chaos theory suggests a model of lawful behavior overlaid by randomness. Example: a bowl with a marble rolling around in it. Within certain limits on how fast the marble is set moving, the friction of the bowl will eventually allow gravity to dominate and cause the marble to come to rest at the bottom of the bowl. This is the form of necessity for a wide range of possible initial positions and velocities of the marble. The state of rest at the bottom of the bowl is an *attractor* for the system and is the resolution of the contradictions driving the process of the marble rolling in the bowl under the influence of gravity and friction.

37. Imagine that there is another force acting on the marble besides gravity which does not destroy the bowl and does not overwhelm gravity, but tugs on it in a way that is not correlated and fixed by gravity and the bowl—for example, the experimenter might, from time to time, gently hit the marble, possibly sending it upwards temporarily. The two processes, governed by gravity + bowl and the other force, are assumed to work according to classical mechanics, so taken in isolation they are deterministic. However, the marble's trajectory can now become erratic, nondeterministic and yet, still move, inexorably, towards the attractor.

38. This example captures, *roughly*, another aspect of why laws are tendential, the second part of Engels's remark about tendential laws cited previously, *viz.*, the impact of the action of a law "clash-[ing] with the simultaneous action of other laws" in a complex of processes. It is only a rough analogy because the studies in chaos theory are mechanical and do not exhibit the occurrence of countertendencies, a point of major importance in political economy. Given the attractor for the fundamental contradiction governing a process, the other contradictions affect the details of the path by which the *system* (not the fundamental contradiction) approaches the fundamental attractor. They bring chance into the picture.

39. Chaos theory is only in its infancy and is completely mechanical. It cannot be imported whole, taken "as is" and incorporated into materialist dialectics without modification, but it is suggestive. It has the important feature of revealing how a process can be governed by fundamentally deterministic laws, yet exhibit randomness. The attractor in Marx's example is communism, which is *not* a final state of rest and eternal harmony, devoid of contradictions. It also has an aspect of a "repeller," when viewed as the state at the beginning of the next leg of development; there is a new attractor towards which society develops; *i.e.*, there will be a fundamental contradiction in each stage of communist society that has its own resolution. In Chapter XXXII of Volume I of *Capital*, Marx describes how the development of the society is driven by the *interaction* of the processes governed by two contradictions: [1] between the forces and relations of production and [2] between the economic base and the political, legal, institutional, social, cultural and ideological superstructure. The interaction of these processes introduces erratic, complex behavior in the processes governed by each, with alternate pathways of development that depend on outcomes having a degree of randomness. Each process has a definite way of unfolding, in and of itself. This is its lawful, ordered nature and is a form of necessity. But other processes introduce an accidental, random or chaotic aspect to the unfolding of the process

for which the first contradiction is fundamental. It is for this reason that Marx made the following comment:

40. World history would indeed be very easy to make if the struggle were taken up only on condition of infallibly favorable chances. It would on the other hand be of a very mystical nature, if “accident” played no part. These accidents naturally form part of the general course of development and are compensated by other accidents. But acceleration and delay are very much dependent upon such “accidents,” including the “accident” of the character of the people who first head the movement.¹⁹

41. Marx’s initial task was to construct an approximation capturing the main trend; *i.e.*, to discern the motion of the most essential laws governing the process. Only then are corrections due to other contradictions examined. The corrections affect the form, pace and particularity of its development but not its essential content. Just as the marble is inexorably drawn to the bottom of the bowl by gravity, so too is society inexorably driven towards the “attractor state” of communism by the fundamental contradiction of capitalism. This is true even if at a given moment, society is not seemingly moving in that direction. That a marble tossed upward is not initially falling towards the bottom of the bowl does not negate the fact that its acceleration is downwards and that this will eventually be the obvious dominant fact about its motion.

42. However, there are many alternate pathways towards the attractor, even in the simple example of the marble and the bowl, and the pace at which the system proceeds towards it has an accidental aspect to it. On the question of human emancipation, there is a great deal of freedom available for the intervention of conscious human activity in hastening—or retarding—the process, depending on how that activity is aligned with the fundamental driving forces that draw society towards the attractor of communism. We now turn to the basic laws of materialist dialectics to understand this drivenness that is inherent to the capitalist system.

II. INEVITABILITY IN MATERIALIST DIALECTICS

1. A COMMENT ON THEORY AND PRACTICE

43. Section 3.2 presents a summary of conclusions arrived at in *Materialist Dialectics for the 21st Century: Reclaiming Our Heritage*, a forthcoming book by A. R. Matigari. In that study, the philosophical pronouncements of Mao Tsetung are criticized and used as foils to bring forth a more correct understanding of the basic laws of materialist dialectics.

44. It must be emphasized that Mao’s philosophical views did not represent some kind of “maverick” or “Chinese” strain of Marxism. Considerable evidence has now been unearthed indicating that Mao’s philosophical views were within the orthodoxy defined by the philosophers promoted by the Soviet Communist Party after 1931, though containing Mao’s own gloss. This is evident in copies of Soviet texts annotated by Mao during the Yen’an period,²⁰ when he lectured extensively on dialectical materialism and wrote the essays, *On Contradiction* and *On Practice*. These essays became the cornerstones of Marxist philosophy in China after 1949 and in the minds of many revolutionaries and

progressive people worldwide during the 1960s and 1970s. Thus, criticism of Mao's philosophical formulations and misconceptions is also criticism of the philosophical orthodoxy that existed in the Comintern during the mid-1930s, particularly that of the Soviet Communist Party and Stalin through the 1930s, as well as of the various mutations of dialectical materialism that followed in its wake. Mao's views deserve special attention because Mao Tsetung Thought was a powerful beacon guiding revolutionaries in the 20th century, especially in the period following the death of Stalin in 1954 and the restoration of capitalism in the USSR—in the new form of state capitalism—with the takeover of the Soviet Communist Party by Khrushchev and his clique in 1956.²¹

45. However, it would be erroneous to construe my remarks as an attack on Maoism itself. Mao was the greatest revolutionary since Lenin, despite basic philosophical errors. Mao's great contributions must be studied and understood by those who seek to put class society in its grave. His correct analysis that a new bourgeoisie had formed in the top ranks of the Chinese Communist Party (Deng Xiaoping, et al.)—as is so apparent today—and his rallying of the masses in the Great Proletarian Cultural Revolution to fight for socialism against these “capitalist-roaders,” is an important lesson in the struggle to build class-free society.²² This fight was essentially a civil war over the direction of Chinese society, using mass ideological—rather than military—struggle as the primary form. Although the communist forces were ultimately defeated, the Cultural Revolution was an unprecedented historical revolutionary struggle within a socialist state. Mao left us a rich legacy of concrete lessons, as well as his example of revolutionary dynamism. His stand on the side of the masses of people of the world against our oppression is a model that will shine throughout history. His words will continue to inspire us as we carry out his revolutionary legacy.

46. But for all those who share this orientation, it is necessary to point out that not all of Mao's pronouncements were on the mark. Many of his philosophical statements point in the wrong direction and must be taken to task for their inadequacies, in the spirit of Mao himself, who taught us that “Marxism is a wrangling ism!” Often, his statements implicitly, although unintentionally, deny the methodology Marx used in *Capital* to correctly analyze capitalism. It is necessary to uphold the spirit and the invaluable scientific legacy of Marx, Engels and Lenin, as well as Mao, for only the clearest and most scientific orientation towards the laws of nature and society will allow us to achieve communism—a bitter lesson we have had to learn and re-learn, painfully, from the defeat of the Paris Commune to the rise of state capitalism in China after the death of Mao.

47. This is not to say that the reversal of socialism in the Soviet Union and the People's Republic of China were due *primarily* to the errors of communists. But important and correct as it is to point to the influence on these reversals of the relative strength of imperialism in the 20th century, this cannot and should not be used to turn away from examining weaknesses in our thoughts and actions. Mao “walked the walk” but in significant ways, despite his inspiring remarks and good guidance, he didn't always “talk the talk.” On the one hand, Mao's actions were based on a strong, *practical* grasp of reality and of materialist dialectics. His strategy and tactics for carrying out proletarian revolution recognized what constitutes the resolution of the contradictions of class society. Likewise,

his view of the development of knowledge (on which he based the mass line) is rooted in an *implicit* recognition of necessity and causal behavior. Yet, on the other hand, his philosophical summation leaves much to be desired, consistently veering away from an adequate, *explicit* discussion of necessity, of causal behavior. The proper treatment of these topics is crucial because the denial of necessity is the central underpinning of pragmatism, the philosophical outlook of U.S. imperialism.

48. Some have asked, “Assuming you are correct about Mao’s philosophical summation, doesn’t this say that a conscious grasp of materialist dialectics is unnecessary to proletarian revolution?” No, it does not. We need clearer, sharper, more explicit statements of how things actually work. Mao, with his intuitive, practical, partial, incomplete grasp of materialist dialectics, was able to take revolution some distance—the Cultural Revolution constituted a new benchmark along the road to communism, after the Paris Commune and the Bolshevik Revolution. But in the last half of the 20th century, our enemies, including both traditional capitalists and—crucially—state capitalists disguised as communists, were able to sow confusion among communists worldwide and with that, defeat for the masses of the oppressed. Thus, the power of the enemy we now face globally demands much greater, more scientific consciousness on our part.

49. In an overall sense, experiment is the primary aspect, the leading edge, in the development of the sciences; theory is secondary. Mao’s experiments—Mao’s practice—provide strong guidance for revolutionaries, even today. But true as this assessment of the relative importance of experiment and theory may be, it is also true that *there are moments when theory becomes primary, setting the basis for a new level of experiment*—in the natural sciences as well as in the science of revolution.

50. For millennia, humanity has stumbled along with far less science than we have today. Our partial understandings, first gained empirically and then developed into theories that can be applied to further transform the world, have allowed us to develop throughout history. It would be very foolish for us to discard truths that are gained empirically on the grounds that we do not yet have sufficient theoretical understanding of them. For example, in practical terms, acupuncture is a valuable form of medicine. Its own explanations for the effectiveness of its treatments omit an obviously important feature—the biochemical basis of the human body. Yet it would be wrong to throw out such a valuable part of our medical heritage just because of this theoretical gap. Likewise, Maoism is a treasure to be cherished, especially its spirit of revolutionary daring and its sharpened understanding of and creative assault on the bourgeoisie under socialism—even if some of Mao’s explanations were not fully scientific. We need to build on them.

51. The development of the Maxwell-Faraday theory of electromagnetism is a good example of the relationship between empirical truth or intuitive knowledge, on the one hand, and theoretical knowledge on the other hand. Faraday²³ lifted the concepts of electric and magnetic fields from the vague realm of speculation, thereby effecting a profound shift in scientific conception that has pervaded all of physics since the mid-19th century. Physics in the 21st century is inconceivable without the field concept. The conceptual scheme he used to guide his landmark experiments was brilliant, allowing him to find the right

experiments to conduct. He cast the results in a form that could lead to theoretical progress and to new experiments.

52. However, to most who have any acquaintance with the subject, the Maxwell-Faraday theory of electromagnetism is known only as the *Maxwell* theory, even though Maxwell was very clear on Faraday's fundamental contributions—Maxwell openly acknowledged that “all he did” was to cast Faraday's ideas into mathematical form, a statement that captures a great deal of truth, even if it understates Maxwell's formidable contribution to the theory.²⁴

53. Faraday's lack of mathematical training did not stop him from making major contributions to science and his name is deeply honored in electromagnetism, thermodynamics and electrochemistry where various laws and ideas are named for him. *It did, however, block him from taking theory and practice to the next level in electromagnetism, a task completed by Maxwell.* In the 21st century the challenges that we face require that we collectively strive to become Maxwell in relation to Mao's Faraday.

2. THE BASIC LAWS OF MATERIALIST DIALECTICS

54. A. R. Matigari's book-length study mentioned above contains the justification for the following formulation of the basic laws of materialist dialectics. Unfortunately, that justification is far too lengthy to be duplicated here, so I will merely summarize the results arrived at in that work. The first three laws essentially restate Engels's triplet²⁵ in elaborated form.

1) TRANSFORMATION OF QUANTITY INTO QUALITY AND VICE VERSA:

55. There cannot be unbounded quantitative growth in the state of any object (a thing or a process) without a qualitative change of state occurring eventually; i.e., though there are periods of relative stability where purely quantitative changes occur, evolutionary development is a basic natural law. There is a 'revolutionary moment' when quantity is directly transformed into quality. “In nature, in a manner exactly fixed for each individual case, qualitative changes can only occur by the quantitative addition or quantitative subtraction of matter or motion (so-called energy).”(Engels)

2) CONTRADICTION

56. The basic form of the dynamics of processes in nature, society and thought is the unity and struggle of opposites in a contradiction. Every process is composed of sub-processes, each driven by a contradiction. One opposite of a contradiction is the *negative* or *destructive* side. The other opposite is the *positive* or *conservative* side. The negative side drives the process towards its resolution by striving to destroy the contradiction which the conservative side strives to preserve. One sub-process characterizes the nature of the overall process and its governing contradiction is called the *fundamental* contradiction.

3) NEGATION OF THE NEGATION

57. The resolution or synthesis of a contradiction results in a leap from an initial state of a system to a final state. This delineates one lap of a spiral. The final state is defined by the

destructive side of a contradiction and is characterized as the state in which the initial process has been destroyed and a new process begins. The final state sublates the initial state; *i.e.*, it is a return of certain features of the initial state (the thesis) but transformed—it is the negation of the negation (the synthesis). A contradiction has an inherent directionality defined by the initial and final states. This is an assertion of necessity.

4) CONDITION AND BASIS OF CHANGE

58. A process undergone by an object reflects the condition of change of the object. The basis of change is physically internal to the object; development of the object is its *self-movement*: However, the condition selects a set of contradictions in the object and in particular, selects the fundamental contradiction.

59. The *first law*, the transformation of quantity into quality and vice versa, is Marxism's summation of the evolutionary character of reality. The emergence of a new quality out of the quantitative development of the old is a basic law in all processes of nature, society and thought. Purely quantitative change cannot continue indefinitely without giving way to qualitative transformation. It does not say *how* the development occurs, a point addressed by the second law, the law of contradiction. However, it elaborates on the second law by describing an essential characteristic of the motion—the qualitative leap. It does not *characterize* the qualitative leap nor does it comment on the continuity between the old and the new, the province of the third law, the negation of the negation.

60. The *second law*, the law of contradiction, describes the *character* of causation in processes. Understanding a process requires grasping the unity and struggle of opposites in the process, especially that of the fundamental contradiction. This law is silent on the character of the motion and the effect produced. In particular, it does not assert that quantitative transformation *must* eventually give way to qualitative transformation, the province of the first law, nor does it specify that there be spiral development and an inherent directionality, the province of the third law. Its application presupposes the identification of contradictions that are significant in a complex process, the province of the fourth law, the condition

61. and basis of change.

62. The *third law*, the negation of the negation, supplies the most essential ingredient missing from the second, *viz.*, that a contradiction is resolved along a definite path and goes out of existence by a synthesis that overcomes both aspects of the contradiction. Much of Matigari's book is devoted to the clarification of this law. For the shorter presentation here, let us merely note two famous passages of Marx and Engels.

63. In Chapter XXXII of *Capital*, Marx writes:²⁶ “The capitalist mode of appropriation, the result of the capitalist mode of production, produces capitalist private property. This is the first negation of individual private property, as founded on the labour of the proprietor. But capitalist production begets, with the inexorability of a law of Nature, its own negation.” In the contradiction governing capitalism—socialized production v. private appropriation—it is the negative, destructive side of the contradiction, the side of socialized production (represented by the proletariat), that determines the form of the inexorability. The expropriation of the bourgeoisie “is the negation of the negation. This does not re-establish private

property for the producer, but gives him individual property upon the basis of the acquisitions of the capitalist era; *i.e.*, on cooperation and the possession of the land in common and of the means of production.”

64. Marx and Engels paint a very vivid picture of the process of negation, the motor of change:²⁷

65. Proletariat and wealth are opposites; as such they form a single whole. They are both creations of the world of private property. The question is exactly what place each occupies in the antithesis. It is not sufficient to declare them two sides of a single whole.

66. Private property as private property, as wealth, is compelled to maintain *itself*, and thereby its opposite, the proletariat, in *existence*. That is the *positive* side of the antithesis, self-satisfied private property.

67. The proletariat, on the contrary, is compelled as proletariat to abolish itself and thereby its opposite, private property, which determines its existence, and which makes it proletariat. It is the *negative* side of the antithesis, its restlessness within its very self, dissolved and self-dissolving private property.

68. The propertied class and the class of the proletariat present the same human self-estrangement. But the former class feels at ease and strengthened in this self-estrangement, it recognizes estrangement as *its own power* and has in it the *semblance* of a human existence. The class of the proletariat feels annihilated in estrangement; it sees in it its own powerlessness and the reality of an inhuman existence. It is, to use an expression of Hegel, in its abasement the *indignation* at that abasement, an indignation to which it is necessarily driven by the contradiction between its human *nature* and its condition of life, which is outright, resolute and comprehensive negation of that nature.

69. Within this antithesis, the private property-owner is therefore the *conservative* side, the proletarian, the *destructive* side. From the former arises the action of preserving the antithesis, from the latter the action of annihilating it. [Emphases in the original]

70. The synthesis of a contradiction results in a negation of the negation, the return of certain features of the thesis—the initial state of a system subjected to certain conditions—but on a qualitatively *different* level, transformed, developed through the working out of the contradiction. This is the form of *necessity* in dialectics. The law of contradiction, the second law, has *directionality*. It gives rise to a definite path of development defined by two consecutive instances of the negation of the negation—the endpoints of the qualitative leap that occurs in one leg of a spiral of development. The third law defines the *content* of the leap, which is not addressed by the first and second laws. *The third law, negation of the negation, is the cornerstone of spiral development, leaps and the transformation of quantity into quality.* Thus it amplifies and makes explicit an important aspect of the law of contradiction. Furthermore, it addresses the aspect of *continuity* in the spiral development: the old is sublated in the new, so the new is *causally connected* to the old, differently for each process and for each contradiction that is resolved. This aspect is missing from all the other laws, especially from the first, which is silent on the issue of continuity with the past, and one-sidedly addresses the issue of discontinuity.

71. The *fourth law*, the condition and basis of change, specifies that the second law, the law of contradiction, generates “self-movement” of an object in a process, in opposition to the

mechanical materialist view, most sharply enunciated in Newton's laws of mechanical motion, that an object is inert, resists change to its state of motion and changes states of motion only by the action of an external agent. The particular contradictions governing the self-movement *are selected by the conditions external to the object*. One of these contradictions is fundamental, characterizing the nature of the process unleashed in the object by the conditions. The selection process itself expresses the first three laws.

72. Denial of the negation of the negation as a law of dialectics is a denial on the most basic level of analysis possible that nature, society and thought are subject to lawful behavior in the unfolding of individual processes. It is a tacit vote for the idea that *everything* is random, unpredictable. The specific form of pragmatism and agnosticism, whose essence is the discarding of necessity in the unfolding of an isolated contradiction via the *vulgarization and revision of the meanings* of negation/sublation, synthesis (as elaborated by the negation of the negation) and spiral development, is the *deepest* and *final* form of this error; its future forms can only return to the past, for there is no deeper analytic level on which the denial of necessity and law can occur. This error on the part of Stalin and Mao and most communists from the late 1930's to the present day, upholds the unity and struggle of opposites as the basic law of dialectics, even as it eviscerates the essential meaning of this law through a view that actually *denies* necessity, by denying the negation of the negation. Hence it is an error that can arise only within the communist movement, unlike other forms which repudiate necessity on a level much closer to the *surface* of thought about the world, not in its essence. This error is the last, most subtle hiding place of the ideological monster whose two faces are metaphysics and pragmatism.

73. Necessity, inevitability and the definiteness of the resolution of a process and its underlying contradiction, are rooted in the drive of the destructive or negative side of a contradiction. They are powered by its inexorable and relentless pursuit of "satisfaction," of "removal of the angst". The vital role of negation/sublation to the development of a process is central to the Marxist-Leninist view of contradiction. Moreover, the transformation of opposites into each other and negation/sublation are, in essence, virtually the same thing. Negation/sublation *describe* the process of the transformation of opposites. Both concepts are vital to the issue of the inevitability of communism. Only when society enters the very specific state of communism will the negative side of the contradiction of private appropriation v. socialized labor, the latter side, be satisfied. In fact, *the key defining characteristics of communism are determined by the negative side* of this fundamental contradiction of capitalism, the side that drives the system to the termination and resolution of the process governed by that contradiction. Though there is much that cannot be predicted about communist society, Marx's memorable remark about an essential element of communism was not simply a beautiful, inspiring idea but a statement about the negation of the negation:²⁸

74. In a higher phase of communist society, after the enslaving subordination of the individual to the division of labor, and therewith also the antithesis between mental and physical labor, has vanished; after labor has become not only a means of life but life's prime want; after the productive forces have also increased with the all-around development of the individual, and all the springs of cooperative wealth flow more

abundantly—only then can the narrow horizon of bourgeois right be crossed in its entirety and society inscribe on its banners: From each according to his ability, to each according to his needs!

75. For all who have gone along with the rejection of the negation of the negation by Stalin, Mao Tsetung and the Third International, the slogan, “From each according to his ability, to each according to his needs!” can be, at best, only a *utopian* wish, not a scientific statement characterizing a central aspect of communist society.

76. The synthesis of a contradiction (as expressed by the negation of the negation, which defines the endpoint of a spiral) is the inevitable result of its resolution. A system is *driven* to a synthesis by the negative, destructive side of the contradiction governing a process. So long as the contradiction exists and is not resolved, the system is driven towards the negation of the negation. When the negation of the negation is reached, the contradiction is resolved and synthesis is accomplished. The opposite sides of the contradiction have been metamorphosed (have been transformed into each other, have sublated each other) and the contradiction is replaced by a new contradiction. The opposites have not merely changed their *positions* to that of their respective opposites, as Mao claimed.²⁹ The negation of the negation—in its *sublation* of aspects of the previously existing state—expresses the fact that a particular process once existed and gave rise to it out of a prior state, thereby creating new conditions for the further evolution of the system; *i.e.*, a new contradiction comes into existence, and with it, a new leg in the spiral of development.

77. The negation of the negation is a basic law of materialist dialectics, the heart of the question of how *necessity* enters. It is bound up with the correct, *classical* understanding of synthesis. The thesis and the result of the synthesis, the negation of the negation, constitutes a “concatenation of states of rest” (Lenin).³⁰ Their difference defines the leap involved in the resolution of a contradiction, from its birth to its cessation, and is the content of spiral development. “[The synthesis] describes the *result* of motion, but not motion *itself*” (Lenin), specifying that the new does not merely supersede the old but that it recapitulates certain features of the old. The new is a transformation of the old in a particular form, a metamorphosis of the old, and bears signs of its ancestry. The negation of the negation has no meaning *apart* from the law of contradiction, which describes the “motion *itself*.” It is always meaningless to ‘apply’ the negation of the negation as though it were independent of the underlying process governed by the particular contradiction.

78. Mao’s philosophical formulations thus clash with Marx’s methodology. The communist theory of value and of the labor process, the latter being a most important underpinning of the theory of knowledge, reveal Marx’s materialist dialectical method in *Capital*. This method employs the central concepts of negation, sublation and negation of the negation, concepts that describe the workings of the law of contradiction. The meanings of synthesis and spiral development are also based on them. Repudiation of these concepts is tantamount to repudiation of *Capital* itself, however inadvertent.

79. There are many burning questions in the world today that must be answered. This cannot happen on a sufficiently deep level, in a way that strikes at the heart of imperialism, fundamentally transforming it, unless our method of analysis is that of materialist dialectics. Like Michael Faraday or Mao Tsetung, we may be able to arrive at many

valuable, correct conclusions, wage many successful battles and win many victories, mainly on an intuitive or empirical basis. But ultimately, because conditions change in quite complex and unexpected ways, we will need to fully utilize our science and its methodology.

80. Most importantly, a thoroughly scientific methodology is absolutely essential to the achievement of communism. Scientific understanding, grasped and acted upon by the masses, is the only way to eliminate the reliance on gurus. Even with very insightful leadership, the masses unarmed—left without training in scientific methodology—are kept in a position of having to receive “The Word” from their “Great Leaders.” The proletariat cannot master society, finally destroying all class systems, without a thorough grounding in the science of Marxism--which means we need the sharpest understanding of materialist dialectics possible.

81. We have only discussed the *basic* laws of materialist dialectics here. In the struggles ahead, we will undoubtedly find it useful and necessary to further sharpen our weapons. I have no doubt that there are more laws of materialist dialectics waiting to be discovered which will increase our analytic skills and hence our ability to accomplish our historical mission. For example, we need a much deeper understanding of the laws governing the interplay of necessity and chance—especially in relation to possible developmental pathways of imperialist crises and in relation to pathways for transformation of socialism into communism. Further advances—successively more profound modeling of reality—require understanding and repudiating the methodological errors which weakened us during the 20th century. The battle for conscious mastery of society by the proletariat—the elimination of all forms of class oppression—demands nothing less than this.

NOTES

¹ See G.A.Wetter, *Dialectical Materialism*, Frederick A. Praeger, Inc. (3rd printing, New York, 1963), p. 355.

² See Mao Tsetung, *On Contradiction* in *Selected Readings from the Works of Mao Tsetung*, Foreign Languages Press, Beijing (1971), p, 85. *On Contradiction* opens with what Mao considered most important for understanding materialist dialectics: "The law of contradiction in things, that is, the law of the unity of opposites, is the basic law of materialist dialectics...In studying this law, therefore, we cannot but touch upon...a number of philosophical problems. If we can become clear on all these problems, we shall arrive at a fundamental understanding of materialist dialectics. The problems are: the two world outlooks, the universality of contradiction, the particularity of contradiction, the principal contradiction and the principal aspect of a contradiction, the identity and struggle of the aspects of a contradiction, and the place of antagonism in contradiction."

The negation of the negation and the quantity/quality transformation are noticeably absent from the list of topics, despite the fact that they were considered to be basic laws of materialist dialectics. Furthermore, Mao did not feel it necessary to address the meaning and importance of central concepts of materialist dialectics such as negation, sublation, synthesis and spiral development. Yet he claims that "we shall arrive at a fundamental understanding of materialist dialectics".

³ Marx refers to the negation of the negation when talking about communism, as for example in his *Economic and Philosophic Manuscripts of 1844*, edited by Dirk Struik and translated by Martin Mulligan, International Publ., New York, 1964, p. 135: "...Communism is the [act of positing] as the negation of the negation, and is hence the *actual* phase, necessary for the next period of historical development, in the process of human emancipation and rehabilitation." I will briefly discuss the negation of the negation in section 3 of this article, in conjunction with Marx's most famous use of the term in Chapter XXXII, Vol, I of *Capital*.

⁴ Prior to the publication of *On Contradiction* in his *Selected Works*, Mao explicitly repudiated the negation of the negation, demoted the law of the quantity/quality transformation to the status of an example of the law of contradiction and, further on in his talk, interpreted synthesis differently than in classical materialist dialectics:

Engels talked about the three categories, but as for me I don't believe in two of those categories...The most basic thing is the unity of the opposites. The transformation of quantity and quality into one another is the unity of the opposites quantity and quality. There is no such thing as the negation of the negation. Affirmation, negation, affirmation, negation...in the development of things, every link in the chain of events is both affirmation and negation. *Talk on Questions of Philosophy* (Aug. 1964) in *Chairman Mao Talks to the People, Talks and Letters: 1956-1971*, ed. Stuart Schram, Pantheon Books (1974).

There is some controversy on this point, however. In his article, "The Laws of Dialectical Materialism in Mao Zedong's Thought: The Question of Orthodoxy" (*Critical Perspectives on Mao Zedong's Thought*, edited by Arif Dirlik, Paul Healy and Nick Knight, Humanities Press, New Jersey (1997), p. 101) Knight points out that *Talk on Questions of Philosophy* "stands alone in the corpus of the Mao texts in 'rejecting' the law of the negation of the negation, and as there are numerous other Mao texts which refer to this law in a far from dismissive manner, we are entitled to treat with some skepticism interpretations which build a case for heterodoxy on this slim foundation."

The fact that Mao omits any mention of the negation of the negation in *On Contradiction* and *On Practice* is completely ignored by Knight. For those who picked up Mao Tsetung Thought in order to make revolution in the period of the upsurge of the 1960's and after, these two explicitly philosophical essays of Mao's were cardinal references. Thus, there is some importance in addressing the views expressed by Mao in these essays, regardless of whether or not these views typified Mao's thinking.

However, Knight points out that "Mao twice referred to the law of 'the negation of the negation' after August 1964, and in neither case did he reject it. At the Hangzhou Conference in December 1965, he restated his belief in the unity of opposites as the 'basic law,' and went on to describe 'affirmation and negation' as a case of the unity of opposites. And in an annotation to the...(internal) draft of Li Da's book *Elements of Marxist Philosophy*, read and annotated by Mao during or after 1965..." Knight previously noted that the law of the negation of the negation was occasionally referred to by Mao "during the late 1950s and early 1960s" as the "law of affirmation and negation."

It will become apparent in section 3 that "affirmation and negation" does not describe the negation of the negation. Knight's use of it to assert that Mao did not reject the negation of the negation is spurious. Even if we accept Knight's study, despite his inadequate explanation of the disparity between Mao's apparent repudiation

of the law of the negation of the negation in 1964, and his “upholding” of this law in other remarks, the main point of our discussion here is the relevance of this law to necessity in dialectics. Even from Knight’s discussion, it is clear that Mao certainly demoted the law of the negation of the negation relative to the law of contradiction and never remarked on its role in elaborating the law of contradiction. Knight does not raise Mao’s reinterpretation of synthesis in 1964 and does not seem to be aware that it is, in fact, consistent with a rejection of the law of the negation of the negation.

⁵ Galileo, whose path-breaking work in mechanics marked the beginning of modern science, understood this point very clearly. See Galileo, *Two New Sciences*, trans. by Stillman Drake (Madison, University of Wisconsin Press, 1974), p. 225. “No firm science can be given of such events of heaviness, speed, and shape which are variable in infinitely many ways. Hence to deal with such matters scientifically, it is necessary to abstract from them. We must find and demonstrate conclusions abstracted from the impediments, in order to make use of them in practice under those limitations that experience will teach us...”

⁶ Lenin, *Philosophical Notebooks*, p. 151: “Law = the quiescent reflection of appearances...therefore law, every law, is narrow, incomplete, approximate...”

⁷ Engels to Conrad Schmidt in Zurich (12 March 1895), *Selected Correspondence*, p. 457.

⁸ Lenin, *Philosophical Notebooks*, p. 259.

⁹ Karl Marx, *Preface to A Contribution to the Critique of Political Economy*, International Publishers, New York (1976). Through Mao Tsetung, Marxism has made a major advance in understanding the contradictions within the transitional period of socialism and what it will take for communism to be achieved.

¹⁰ *Capital*, Vol I, International Pub., New York (7th printing, 1975), p. 72. “There it is a definite social relation between men, that assumes, in their eyes, the fantastic form of a relation between things. In order, therefore, to find an analogy, we must have recourse to the mist-enveloped regions of the religious world. In that world the productions of the human brain appear as independent beings endowed with life, and entering into relations both with one another and the human race. So it is in the world of commodities with the products of men’s hands. This I call the Fetishism which attaches itself to the products of labour, so soon as they are produced as commodities...”

¹¹ K. Marx, *Capital*, Vol I, International Pub., New York (7th printing, 1975), p. 763.

¹² F. Engels, *Socialism: Utopian and Scientific*, in *Selected Works of Marx and Engels* in one vol., p. 416, International Publishers, New York (1968)

¹³ In contrast, however, materialist dialectics has the greatest possible universality. See F. Engels, *Anti-Dühring*, 1972 New World Paperback Edition, p. 155: “Dialectics is nothing more than the science of the most general laws of motion and development of Nature, human society and thought.”

¹⁴ There are more sophisticated formulations of Newtonian mechanics in which force need not ever appear, such as in Lagrangian or Hamiltonian mechanics based on an action principle. The basic points made here are not affected by this. In the atomic regime, the impossibility of accounting for the data using that framework drove physicists to the invention of a new framework, quantum mechanics, which uses Lagrangian or Hamiltonian concepts.

¹⁵ This paragraph discusses issues that really require at least another whole book for those who are not already familiar with special and general relativity. For those without much of a background in mathematics, you can pursue this matter further in introductory texts such as *Conceptual Physics*, by Paul Hewitt, Addison-Wesley, 8th ed. (1998).

¹⁶ I say “virtually” because it seems to be possible to construct an elaborate scheme using nonstatic forces to eliminate the field concept but it is very bizarre and cumbersome and furthermore, cannot be ported over to quantum phenomena.

¹⁷ In *Materialist Dialectics for the 21st Century: Reclaiming Our Heritage*, by A. R. Matigari (forthcoming), a discussion of mechanical motion is given which adapts Marx’s use of the negation of the negation to obtain the derivative of a function (in the language of differential calculus). See *The Mathematical Manuscripts of Karl Marx*, first published in German and Russian as *Mathematischeski Ruskopsii* by Nauka Press, Moscow (1968), English trans. by C. Aronson and M. Meo, New Parks Pub., London (1983), especially p. 90-115. Compare this passage of the manuscript with Marx’s description of the velocity of money as the unity of sale and purchase, p. 121, *Capital*. There is a later, more complete translation: *Mathematical Manuscripts*, by Karl Marx, translated and edited by Pradip Baksi, Viswakos Parisad, Calcutta (1994).

Mechanical motion is described by Engels as follows: “Motion itself is a contradiction; even simple mechanical change in place can only come about through a body at one and the same moment of time being both in one place and in another place, being in one and the same place and also not in it.” (F. Engels, *Anti-Dühring*, New World Paperback Edition, International Publishers, New York (1972), p. 133.) Using this description, Matigari obtains the instantaneous velocity and the instantaneous acceleration of a particle as a consequence of the negation of the negation. Based on this result, all of the formulations of physical laws using calculus have the

laws of materialist dialectics operating beneath their surface appearance. However, Matigari points out that much detail remains to be provided on this issue.

¹⁸ The repeatability of experiments is contingent on conditions existing that permit the repeated construction of a certain approximation to the ideal case, despite the fact that we cannot “step into the same river twice.” How well such approximations can be effected under changing conditions is not a given; conditions can change so drastically that a given experiment is not repeatable.

¹⁹ K. Marx to L. Kugelmann in Hanover, London, April 17, 1871, *Selected Works in One Volume*, International Pub., New York (1968), p. 681.

²⁰ See the article by Nick Knight cited in note 4, as well as Nick Knight, *Mao Zedong and Dialectical Materialism*, M. E. Sharpe, Inc., Armonk, New York (1990), and Nick Knight, *Li Da and Marxist philosophy in China*, Westview Press, Boulder, Colorado (1996).

²¹ For a debate over the nature of the Soviet Union after Stalin, see *The Soviet Union: Socialist or Social-Imperialist?* Part I: *Essays Towards The Debate On the Nature of Soviet Society*, compiled by the Editors of *The Communist*, theoretical journal of the Revolutionary Communist party, USA, RCP Publications, 1983; and Part II: *The Question is Joined*, by Raymond Lotta and Albert Szymanski, RCP Publications, 1983.

²² For documents detailing both sides of this titanic struggle, see *And Mao Makes 5*, edited by Raymond Lotta, Banner Press (1978). For a study of the dismantling of the socialist economy after Mao’s death, see Michel Chossudovsky, *Towards Capitalist Restoration? Chinese Socialism After Mao*. Martin’s Press, New York (1986).

²³ Michael Faraday began his scientific career as a laboratory technician assisting one of the great scientists of the day, Sir Humphrey Davy, the head of the Royal Institution, a research center in London. Born in 1791 of a poor working class family, Faraday was self-educated. Despite his lack of a formal education, his phenomenal physical insight and extraordinary dedication made him a giant among scientists. He later succeeded Davy as the head of the Royal Institution.

²⁴ James Clerk Maxwell, *A Treatise on Electricity and Magnetism*, (1873): “As I proceeded with the study of Faraday, I perceived that his method of conceiving [electromagnetism] was also a mathematical one, though not exhibited in the conventional form of mathematical symbols. I also found that these methods were capable of being expressed in the ordinary mathematical forms, and thus compared with those of the professed mathematicians.”

²⁵ See F. Engels, *Dialectics of Nature*, Progress Press, Moscow (5th printing, 1972), p. 62.

²⁶ K. Marx, *Capital*, Vol I, International Pub., New York (7th printing, 1975), p. 763.

²⁷ K. Marx and F. Engels, *The Holy Family*, trans. into English by Richard Dixon and Clement Dutt, Progress Publ. (1975), p. 43. In this work, Marx and Engels emerged from the cocoon of Hegelianism. They first formulated this sense of drivenness in capitalism in 1845. The German edition of *Capital* of 1867 presented for the first time, a scientific analysis of how that drivenness plays itself out. The point is made on p. 763, stripped of the Hegelian vocabulary but not of the Hegelian concepts, and fleshed out with the results of Marx’s study of capitalism: “As soon as...the laborers are turned into proletarians, their means of labor into capital, as soon as the capitalist mode of production stands on its own feet, then the further socialization of labor and further transformation of the land and other means of production into socially exploited and, therefore, common means of production, as well as the further expropriation of private proprietors, takes a new form,...the capitalist exploiting many laborers. This expropriation is accomplished by the action of the immanent laws of capitalistic production itself, by the centralization of capital...Hand in hand with this centralization, or this expropriation of many capitalists by few, develop, on an ever-extending scale, the co-operative form of the labor-process, the conscious technical application of science, the methodical cultivation of the soil, the transformation of the instruments of labor into instruments of labor only usable in common, the economizing of all means of production by their use as means of production of combined, socialized labor, the entanglement of all peoples in the net of the world-market, and with this, the international character of the capitalistic regime. Along with the constantly diminishing number of the magnates of capital, who usurp and monopolize all advantages of this process of transformation, grows the mass of misery, oppression, slavery, degradation, exploitation; but with this too grows the revolt of the working-class, a class always increasing in numbers, and disciplined, united, organized by the very mechanism of the process of capitalist production itself.”

²⁸ K. Marx, *Critique of the Gotha Programme*, in *Selected Works of Marx and Engels in one vol.*, pp. 324-25, International Publishers, New York (1968).

²⁹ Mao Tsetung, *On Contradiction in Selected Readings from the Works of Mao Tsetung*, Foreign Languages Press, Beijing (1971), p. 117.

³⁰ In this paragraph I am following Lenin’s important remark about the description of motion: “Movement is the presence of a body in a definite place at a given moment and in another place at another moment—such is the objection of Chernov...in the wake of *all* the ‘metaphysical’ opponents of Hegel. This objection is incorrect: (1)

it describes the *results* of motion, but not motion *itself*; (2) it does not show, it does not contain in itself the *possibility* of motion; (3) it depicts motion as a sum, as a concatenation of states of *rest*, that is to say, the (dialectical) contradiction is not removed by it, but only concealed, shifted, screened, covered over." [Lenin's emphases] Lenin, *Philosophical Notebooks*, p. 259.