According to Plato and Hegel, dialectic comprises two related ways of thinking, the division of a whole into parts and the generation of a whole from partial hypotheses. These dialectical methods are exemplified and informed by monetary representation and exchange. Plato, for example, argues that most men unwittingly divide up the conceptual and political world in which they live by a kind of division that is formally identical with money changing. His dialogues show how the dialectical relationships of the whole Idea (the One) to its special parts (the many) differ from the relationships of a coin of large denomination to the coins of smaller denomination into which it may be changed. They show how monetary differs from dialectical differentiation. Plato stresses that ignoring or relying uncritically on deceptive interconnections between economic and linguistic categories (rather than taking them into account) renders the intellectual disease of which they are symptomatic more difficult to diagnose and more politically dangerous. In the thought of such modern philosophers as Arthur Schopenhauer and Immanuel Kant there is still some un-


2. “Every general truth is related to special ones as gold to silver in so far as we can convert it into a considerable number of special truths that follow from it, just as gold coin can be turned into small change” (Arthur Schopenhauer, “On Logic and Dialectic,” in Parega and Paralipomena: Short Philosophical Essays, trans. E. F. J. Payne [Oxford, 1974], 2:21).

3. Immanuel Kant sometimes considers even the idea of virtue, which Socrates in the Meno seems to conflate with the One, in terms of money changing. “All human
questioned dependence on formal relationships between division and money changing.

Plato argues that dialectical generation, or the production of the whole from partial hypotheses, may be connected with monetary processes in the same way as dialectical division. Socrates, for example, is said to deposit in his interlocutors partial falsehoods or likenesses of the whole Idea that the god has deposited with him. These seminal parts are homogeneous with the Idea in the same way that monetary interest is homogeneous with its principal or that a child is homogeneous with its progenitor. Socrates' maieutic art ensures that from these likenesses are generated, by a series of intellectual births and rebirths from the minds of his interlocutors, intellectual offspring ever more like the Idea. (In the same way the hypotheses figured on the divided line approach the Idea ever more closely.) Thus Socrates husbands the Idea as if he were a midwife, and he draws intellectual hypotheses out of and to the Idea as if he were a banker drawing out compound interest from a financial deposit or hypothec.5

Greek dialecticians thus articulate the relationship of genuses with species in terms of monetary differentiation and elucidate intellectual hypothesizing in terms of monetary hypothecation. That articulation, as we shall see in this chapter, involves tropologies of division and hypothesizing that are similar to (and which perhaps influenced) the tropologies of adequation (adequatio) and sublation (Aufhebung) proposed by Kant and Hegel. In Hegelian dialectic, for example, differentiation (division) and hypothesizing similarly involve the generative potential of parts (hypotheses and antitheses) and the absolute whole. They involve the mutual cancellation of two partial Hypotheses in polar opposition to each other, and their incorporation and transcen-

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4. For Plato's analogy from intellectual offspring both to animal offspring (tokos) and to monetary interest (tokos), see Plato, Republic 507, 509, 534.

5. In English, as in Greek, hypothec (from hypothéke, literally "deposit") and philosophical hypothesis (from hypothéssis) are cognate. On Socrates' divided line, see Marc Shell, The Economy of Literature (Baltimore, 1978), pp. 39-45.
dence by a third. This transcendence, Hegel implies, is the sublative cashing in (Aufhebung) of an already canceled or annulled financial bond, or exhausted Hypothek. The moderns—Kant and Hegel—shift dialectic, as we shall see, away from the Platonic division of the Ideal One towards the cancellation (Aufhebung) of things to zero. The modern movements from division to sublation and from One to none, however, do not eradicate the "economics" in dialectic. The modern concept of sublation, indeed, seems to express the historical fact of the internalization of economic form in philosophy.

Suppression and Adequation in Kant

In *An Attempt to Introduce the Concept of Negative Quantities into Mundane Wisdom* (1763), Kant discovers suppression (Aufhebung) to zero in Newtonian physics and in credit economics. Kant considers two kinds of opposition. Logical opposition is contradiction, affirming and denying something about a single subject. (Such affirmation and denial, as Kant says, are of no consequence: *nihil negativum repre- sentibile.*) Real opposition, on the other hand, arises when two predicates of a single subject are opposed, but without logical contradiction. Real opposition occurs, for example, when a single body is pulled in different directions by two forces so that one force tends to suppress (aufheben) the other. One direction in which the body is pulled may be called "negative" and the other "positive," but these words are meaningful only when the directions are taken in relation to each other.


8. "In its mathematical sense, [Aufhebung] is used of magnitudes which reduce each other to zero [or which] mutually annul or suppress each other, and therefore become indifferent to their equation (W. T. Harris, "Note," in *Hegel: Selections*, ed. J. Loewenberg [New York, 1929; rpr. 1957], p. 102).

9. Some thinkers on the left ignore the significance of the distinctions that Kant makes between logical and real opposition. Lucio Colletti ("Marxism and the Dialec-
The principal example of nonphysical suppression that informs Kant's concept of negativity is mutual suppression by credit and debt. (The example is not surprising; the opposition of positivity to negativity was first "discovered" by Brahmagupta when he studied the unique interaction of credit and debt in the monetary economy of India in the seventh century A.D.) Throughout *The Concept of Negative Quantities*, Kant refers to "negative" debt and "positive" credit as real opposites. In this way he allies *Aufhebung* with a zero sum:

A person who owes a debt to another person of 100 florins must find this sum. But suppose that the same person is owed 100 florins by another. The latter is then held as reimbursing the former. The two debts united form a ground (*Grund*) of zero. There is no money to give and no money to receive.\(^\text{11}\)

In economics, as in physics, the zero is supposed to be a relative nothing, the final result of *Aufhebung*. In Kant's thinking, an *Aufhebung* is the cancellation to zero, or stasis, of a debt (*Aktivschuld*) by a credit (*Passivschuld*) when both *Schulden* are "predicates belonging to a single subject and are quantitatively equal to each other." The *Grund* is zero.

Kant seems to generalize this notion of reciprocal exchange infinitely.\(^\text{12}\) In *The Concept of Negative Quantities*, he applies the notion of mathematical negativity and reciprocity to psychology, to the estimation of the total values of pleasure and displeasure, to crime and pun-

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\(^{11}\) Kant, *Versuch*, in Werke, 2:784; cf. 2:785–89.

\(^{12}\) On a similar generalization of the concept of reciprocal exchange, see Gregory Vlastos, "Equality and Justice in Early Greek Cosmologies," Classical Philology 42 (July 1947): 173–74.
ishment, and so on. For Kant, the sum total of such opposites is or should be zero. The concept of zero and of negativity is thus crucial to Kant's studies of morality and human intentions. Numerical mathe-matization informs the Categorical Imperative of his later works on morality. And in Perpetual Peace (1795) the notion that different forces cancel each other informs a modern political theory of the balance of powers in which, as in Adam Smith's economics, a cunning historical ruse is seen to balance out and perfect the separate tendencies of individuals, larger groups, or nations. The end of this historical balance is a mutual cancellation, which becomes a dynamic equilibrium that is supposed to move history forward. The theory of negative quantities, which began by associating equation with mutual suppression, ends with a metaphysical and political justification of the liberal free-market system.

Plato tried to show how opposites, such as pleasure and pain, participate in each other as species of one genus or as parts of a single unity. Kant, however, tries to show that such opposites mutually suppress each other to zero. The Being of unity in Plato, then, is replaced by the Grund of a relative zero in Kant.

This replacement, which relies on a theory of equilibrium or equation, affects the Kantian theory of truth. The Platonic conception of truth is connected with the one way to One (alētheia). The Kantian conception of truth, however, is connected with the double way of equation towards zero. In the Critique of Pure Reason (1781, second edition 1787), for example, Kant adopts the Thomist definition of truth as the equation or adequation of intellectus and res. He assumes as granted "the nominal definition of truth, that it is the agreement [Übereinstimmung] of knowledge with its object." Thus he associates


14. For Plato, see the ironic Socrates' etymological explanation of truth (alētheia) as "the wandering way of the god" (theia alē) (Cratylus 421b). For Thomas Aquinas, see his Quaestiones disputatae de veritate, question 1, art. 1. Aquinas borrows the phrase adequadatio res et intellectus from Isaac Israeli (ca. 855–955).

15. Kant, Kritik der reinen Vernunft, A 58 = B 82; translated as Immanuel Kant's Critique of Pure Reason, trans. Norman Kemp Smith (London, 1933), p. 97. (For references to the Kritik, numbers preceded by A refer to pages of the first edition [Riga, 1781] and numbers preceded by B refer to pages of the second edition [Riga, 1787].) The "object" in question is the object of knowledge, not the thing-in-itself.
logical truth with an adequation implying the existence of two things that are (in some essential way) adequate or equal to each other. As a matter of course, an equal subtracted, or lifted up (aufgehobene), from an equal leaves zero.\footnote{\textsuperscript{16}} The tropic movement towards zero is essential to the concept of truth as adequation.

Kant argues that the general logic of truth can be either analytic or dialectic. Analytic logic is a negative touchstone that touches properly only the form of truth or that tests only whether our knowledge contradicts itself. General logic, however, has "no touchstone for the discovery of such error as concerns . . . the content." Kant criticizes the "dialecticians" who believe that general logic can be treated as "an organon for the actual production of at least the semblance of objective assertions." He argues that "dialectic" is a logic of illusion, and that "dialecticians" do not understand that "logic teaches us nothing whatever regarding the content of knowledge, but lays down only the formal conditions of agreement with the understanding," and that "since these conditions can tell us nothing at all as to the objects concerned, any attempt to use this knowledge as an instrument [Werkzeug] or organon which professes to extend and enlarge our knowledge can end in nothing but mere talk. . . ." Kant thus argues that the formal laws of logic cannot provide such adequation; knowledge is nothing more than the combinatorial activity of the understanding.\footnote{\textsuperscript{17}} In Kant, then, the Grund of a relative zero becomes, like Being itself, a kind of unknowable source.

Plato argued that the universe is subject to government by number, and he recognized a general similarity between number (\textit{numerus}) and coined money (\textit{nummus}): the theory of number and the theory of coined money concern both symbols (numbers as numerals [\textit{Zahlen}] and the inscriptions in ingots) and things (numbers as groups of things [\textit{Anzahlen}] and the ingots themselves), which the symbols represent as, or homogenize into, one genus. Kant distinguishes his from the

\footnote{\textsuperscript{16}} The connection between "equation" and \textit{Aufhebung} is commonplace in German mathematical discourse. Thus Andreas Reyher, in a widely used textbook \textit{(Arithmetica oder Rechen-Büchlein)} [Gotha, 1653; 4th ed., 1657], p. 72) writes: "Wie die grosse gebrochene Zahlen in Kleinere gleichgeltende zu reduciren, auffzuheben oder zu bringen."

\footnote{\textsuperscript{17}} Kant, \textit{Kritik}, A 60–61 = B 85–86; trans. Smith, pp. 98–99. I do not consider, for the time being, transcendental logic.
Platonic position by an elaborate disengagement of the intellectual \textit{Zahl} from the \textit{Anzahl} of things.\footnote{18. On "the calculating character of modern times" and the Kantian conception "of the world as a huge arithmetical problem," see Georg Simmel, \textit{The Philosophy of Money}, trans. T. Bottomore and D. Frisby (London, 1978), esp. pp. 443-46. On the relationships between \textit{numerus} and \textit{nummus}, and the Greek root \textit{nem-}, see Chapter 6, note 28.}

The Kantian concept of truth, however, is relative to another numerical concept, the zero obtained from discourse about economics and physics. In \textit{The Concept of Negative Quantities}, Kant argued that the \textit{Grund} of being is associated with an equation that is the mutual cancellation (\textit{Aufhebung}) to zero of opposite and real (i.e., not logically contradictory) objective forces, such as physical attraction and repulsion or monetary debt and credit. In \textit{The Critique of Pure Reason}, he argues similarly that truth is associated with the adequation of \textit{intellectus} and \textit{res}, and refers the relationship or affinity of subject with object to a transcendental \textit{Grund}.\footnote{19. Kant, \textit{Kritik}, A 57-64 = B 82-88; trans. Smith, pp. 97-101.} (Note, however, that credit and debt, of which he wrote in \textit{The Concept of Negative Quantities}, are homogeneous, and that the knower and the known, of which he writes in the \textit{Critique of Pure Reason}, are heterogeneous.) In his theory of truth, then, Kant both uses \textit{Aufhebung} (as adequation) and decries dialectic (which would confirm the truth of objective assertions). That \textit{Aufhebung} is crucial both to the zero in the adequation of analytic logic (which is confined to mere forms) and to the zero in real equation (which may consider quantities and forces of objects) suggests, however, an unavoidable problem in the Kantian critique of dialectic. As it happens, the Kantian relationship between \textit{Aufhebung} and truth is one of the problems with which the dialectician Hegel takes issue.

\textit{Against Formalism}

Hegel criticizes the infinite generalizations of wayward Kantian systems of reciprocities like those of Friedrich Wilhelm Joseph von Schelling and Johann Gottlieb Fichte. In \textit{The Phenomenology of Mind} (1807), for example, Hegel attacks the formalism of Schelling: "The predicate may be subjectivity or objectivity, or again magnetism, electricity, and so on, contraction or expansion. . . . With a circle of
reciprocities of this sort it is impossible to make out the real fact in question.\(^2\) According to Hegel, Kant's formalism of real opposites degenerates with Schelling into a schematizing system of pseudoclassification or pseudodifferentiation like the system of labeled boxes in a merchant-grocer's stall. Schelling employs mathematical relations, such as \(o = 1 + 1 - 1 + 1 - 1 \ldots\), to define his notion of differentiation and cancellation (Aufhebung).\(^2\) Hegel, in his History of Philosophy, claims that for Schelling all difference is only quantitative, as is money in its role as measure, and he makes his famous assertion that philosophical "difference must really be understood as qualitative."\(^2\) Similarly, in Faith and Knowledge (1802), Hegel attacks the formalism of deduction in Fichte as "nothing but a transformation of signs, of the minus sign into plus sign." He mocks Fichte's formalism, as presented in his Vocation of Man (1800), by an ironic observation that "an empty money-bag is a bag with respect to which money is already posited, to be sure, though with the minus sign; money can immediately be deduced from it because, as lacking, money is immediately posited."\(^2\) Hegel thus accuses post-Kantian formalists of a tendency to differentiate among the things of the world as though thinking were merely double-entry bookkeeping.

This accusation informs Hegel's discussion of "the opposition of


\(^{21}\) Joseph L. Esposito (Schelling's Idealism and Philosophy of Nature [Lewisburg, Pa., 1977], esp. pp. 178–85) suggests that Hegel misunderstands Schelling and is confused about the relationship between quantity and quality. Esposito notes that "Schelling's Absolute first appears as simple (absolute) indifference, as [Lorenz] Oken . . . had interpreted it, and progressively moves toward greater differentiation. . . . However, this differentiation is not, in fact, conceived as real. . . . To explain this Schelling would use the . . . mathematical relation \([o = 1 + 1 - 1 + 1 - 1]\). Hegel prefers to characterize this motion of cancellation [Aufhebung] as 'the life of the Concept,' but for Schelling this metaphor and all those involving 'movement' [which] Hegel uses [are] deceptive" (p. 180; cf. F. W. J. von Schelling, Sämtliche Werke, 14 vols., ed. K. F. A. Schelling [Stuttgart, 1856–61], 2:41).


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Being and Nothing" in his *Logic* (1812–16). Here Hegel offers a critique of the Newtonian physics that (as he argues) Kant incorporated wholesale into his philosophy, and he makes a related attack on Kant's ontology and theory of the creditability of Being, or on Kant's attempt to demonstrate the impossibility of the Cartesian and Leibnizian proofs of the existence of God.24 In the *Critique of Pure Reason*, Kant compared the actual and potential worths of certain moneys (*Taler*), and pretended that Descartes had argued that because we have the idea of God He must exist in the same way that if we have the idea of money it can be spent. Kant wrote that "the attempt to establish the existence of a supreme being by means of the famous ontological argument of Descartes is merely so much labor and effort lost; we can no more extend [reicher werden] our stock of [theoretical] insight by mere ideas [Ideen], than a merchant can better his position by adding a few noughts [Nul- len] to his cash account."25 Hegel criticizes Kant's supposed demonstration of the impossibility of the ontological argument by ridiculing his identification of "ideas to be extended" with "noughts to be cashed in." Hegel, for whom the possibility of ontology is crucial, argues that "what above all has made successful the Kantian critique of the ontological proof of the existence of God is without doubt the example which Kant added to make it more striking." He argues at length that a coin is different from God; in terms of the attachment of predicates to subjects, they operate differently.26

Sublation and the Modus Tollens

Hegel's position against formalism accounts for his redefinition of *Aufhebung*. In Hegel *Aufhebung* is not "suppression," as it is in the


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Kantian definition, but rather “sublation.” In the Logic Kant defines his new meaning for Aufhebung with a reference to the Ciceronian pun, “Tollendum esse Octavianum,” which may be translated as “Octavian is to be raised/rased.” (Sublation, the term I use to translate Hegel’s Aufhebung, is derived from the Latin verb tollo, tollere, sustuli, sublatum.) In the Latin pun tollere has two of the three meanings of Aufhebung in Hegelian dialectic. It means “keeping or preserving” and “making to cease or to finish,” but it does not mean “qualitatively transcending,” the third movement of Aufhebung, which Hegel usually has in mind.28

In his reworking of Aufhebung Hegel criticizes Kant’s dismissal of arguing by the modus tollens and Kant’s consequent limitation of the boundaries of human knowledge. Kant, in his discussions of contradiction in the Critique of Pure Reason and in his Logic (1800), defined the modus tollens, which he associates with Aufhebung, as one mode of reasoning which “proceeds from consequences to their grounds.” For Kant, the modus tollens, or apagogic mode, is “the mode of conclusion according to which the consequence can only be a negative and indirectly sufficient criterion of the truth of cognition.” (Compare “If A then B; not-B, therefore not-A” with “If A then B; B, therefore A.”) If we allow this definition to stand unqualified (as Hegel does not), then it is common sense to distrust the modus tollens because, as Kant notes, it is “only negative.”29

raise himself to this abstract generality in his mind, so that in fact it becomes a matter of indifference to him whether the hundred dollars . . . are or are not” (Wissenschaft der Logik [Werke, 5:91]; trans. Johnston and Struthers, 1:101). Hegel does not consider in what sense moneys, such as Taler, may differ in respect to “predication,” not only from God but also from other things. In his discussion of this section of Hegel’s Logic, Charles Taylor (Hegel [Cambridge, 1975], pp. 246—52) misconstrues Hegel’s understanding of quantity by misinterpreting his “100 Taler [units of money]” as “100 units [of anything].”27

28. In a letter to Cicero, D. Brutus writes that “Labeo Segulius . . . told me . . . that Caesar [i.e., Octavian] himself had made no complaint at all about you, except as to the remark which he said you had made ‘that the young man should be praised, honoured and immortalized [tollendum]’” (in Cicero, Letters to his Friends, trans. W. Glynn Williams, 3 vols. [Cambridge, Mass., 1929], vol. 2, p. 479, 11. 20). From Velleius Paterculus (Oxford Classical Text, ed. R. Ellis [Oxford, 1898], 2: 62) it would seem that tollendum was to have a double meaning like the one that Hegel ascribes to it, but D. R. Schackleton (Cicero: Epistulae ad Familiares [Cambridge, 1977], 2: 541) suggests that such a meaning would have been “forced.” Cf. Suetonius, trans. J. C. Rolfe, 2 vols. (Cambridge, Mass., 1913), 1:137.

29. Kant, Kritik, A 790—91 = B 818—19; trans. Smith, pp. 625—26. And Kant,
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For Kant the *modus tollens* is “permissible only in rhetoric and in those sciences in which it is impossible mistakenly to substitute what is subjective in our representations for what is objective, that is, for the knowledge of that which is in the object.” Nevertheless Kant does allow one use of hypotheses “in the domain of pure reason.” One may use hypotheses, he says, “for the purpose of defending a right, not in order to establish it.” In this case,

we must always look for the opposing party [which we may attack by using hypotheses] in ourselves. For speculative reason in its transcendental employment is *in itself* dialectical; the objections which we have to fear lie in ourselves. We must seek them out, just as we do in the case of claims that, while old, have never become superannuated, in order that by annulling [Vernichtigung] them we may ground [grunden] a permanent peace [ewigen Frieden].

Only in argument where the opposing party is “ourselves” does Kant hold that dialectical hypotheses are tolerable to pure reason.

Hegel seeks to extend the territory within which to allow annullment by the *modus tollens* and by dialectic. He does so by reinstating and adopting Thomas Aquinas’ conception of the *modus tollens*, or sublatio, as mediation between opposites. Hegel introduces a new *modus*

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30. Kant, *Kritik*, A 777 = B 805; trans. Smith, pp. 617–18. Kant’s attitude to the *modus tollens* may be compared with his Newtonian suspicion of hypotheses: “Everything . . . which bears any manner of resemblance to an hypothesis is to be treated as contraband [verbotne Ware]; it is not to be put up for sale even at the lowest price, but forthwith confiscated immediately upon detection” (Kant, *Kritik*, A xv; trans. Smith, p. 11). According to Aristotle, there are other proofs by refutation of hypotheses (*anairoumenon hypothēsin*) (Aristotle, *Eudaimonean Ethics* 1222b; cf. *Sophistical Refutations* 177a).

31. In his consideration of whether evil destroys good entirely, Thomas Aquinas writes that “the good which is directly opposite to an evil is wholly made away with [tollitur], as we have said, but other goods are not wholly made away with [tollentur]” (*Summa Theologiae*, 1a. 48. 4). Related examples of the way the Hegelian concept of Aufhebung militates against that of Kant include his discussion of giving and receiving hypotheses or deposits (*Phänomenologie*, in *Werke*, 3:316–23; trans. Baillie, pp. 446–53) and his refutation of the Kantian reciprocity theory of crime and punishment: “The annulment [Aufhebung] of the crime is retribution [Wiedervergeltung] in so far as (a) retribution in conception is an ‘injury of the injury,’ and (b) since as existent a crime is something determinate in its scope both qualitatively and quantitatively, its negation as existent is similarly determinate. This identity rests on the concept, but is
tollens (the dialectical Aufhebung), which becomes his principal mode of argument.

**Checkers and Checks**

Sublation in Hegelian dialectic comprises both the cancellation or equation of opposing forces to a relative zero, as it does in Kant, and the transcendence of opposites, as it does in J. C. Friedrich von Schiller. The presentation of Hegel's theory, moreover, associates logical procedures, such as cancellation and transcendence, with uniquely monetary ones. If Hegel conceives of money as a purely quantitative measure (as opposed to, say, a commodity with value in its own right), then the association of logic with money may be symptomatic of, and may even inform, problems in his notion of Aufhebung. Thus locating "the logical place of money" in Hegelian dialectic helps to situate the "quality" of Hegelian Aufhebung.

In this section I shall consider three traditions on which Hegel draws, traditions in which Aufhebung is associated with counting, exchange, and interest.

1. In its initial stages Hegel's intellectual method is similar to the arithmetic one of contemporary German accountants. In German states in the eighteenth century, most merchants did their accounts by manipulating tallies or checkers on a board. (In Hegel's time the English chancellor of the exchequer still used this method; compare fig-

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32. J. C. Friedrich von Schiller (Über die ästhetische Erziehung des Menschen in einer Reihe von Briefen [Letters on the Aesthetic Education of Man], letter no. 18, in Sämtliche Werke [Munich, 1962], 5:625) writes that "beauty unites [the] two opposed states and thus sublimates [aufhebt] the opposition. But because both states remain eternally opposed to each other, they cannot be united in any other way than by being sublimated." See also Schiller's use of Aufhebung in letter no. 20, where he observes that "the scales balance when they are empty; but they also balance when they contain weights" (Schiller, Sämtliche Werke, 5:633).

In reckoning, "the tallies or counters used for working out problems on a board were 'picked up [aufgehobene]' when dealt with; thus if one was picked up from either side, the result that remained was unaffected." The money token, or checker, was canceled without changing the total. The cancellation of the opposing part became a partial means towards indicating the one whole.

The historical transition from reckoning with this checkerboard to figuring with Arabic numerals, algorithm, and the sign for nought (the cipher "0") was a significant turning point in Western thought. (See figure 43.) The new "algebra" of double-entry bookkeeping had been "discovered" by ninth-century Arabs who needed an efficient method to calculate inheritance shares. Their discovery influenced analysis of simple and dialectical opposition. Al-Khowârizmi's *Concise Calculation of Restoration and Confrontation* was, "in effect, a new way of solving equations, first by 'restoring' normalcy to an equation by bringing its negative terms up to a positive value through addition, a process which was repeated on the other side of the equation; and second by 'confronting' similar and congruent terms on either side of the equation and eliminating them." This way of using equation and adequation to zero especially intrigued thinkers who lived during the transition from the old system of accounting to the new one. Among these thinkers were Shakespeare, who lived during a period of rapid economic and financial development in Elizabethan England, and Kant.


35. For an early comparison of calculation by checkerboard (abacus) and by algorithm, see Gregor Reisch, *Margarita Philosophica* (Freiburg, 1503). Reisch includes a vignette depicting the opposition between the old and new arithmetic (figure 43).


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and Hegel, who lived in economically and financially backward, although philosophically advanced, states.

2. Discussion about the relationship between economic theory and philosophy in Hegel’s time was largely centered on the issues of changing money and redeeming monetary notes. Kant, in “What is Money?” (1797), discusses money as an intellectual concept or rational form.\(^{38}\) Fichte, in his “Theory of the Right of Exchange” (1800), presents an argument by which the withdrawal of money from a bank account and the drawing of conclusions from logical forms may be allied. “The form,” writes Fichte, is the draft \([\text{Trasse}]\).\(^{39}\) The works of economic theory that Fichte adapts to idealist philosophy—Carl Grattenhauer’s \textit{Procuration in Exchange} (1800), for example, and Gottlieb Hufeland’s \textit{Protestation in Exchange} (1799)—were themselves adapted to economic theory from works of idealist thinkers such as the Schlegel brothers and other “idealist transcendentalists.”\(^{40}\)

In \textit{The Difference Between Fichte’s and Schelling’s System of Philosophy} (1801), Hegel criticizes Fichte’s theory of exchange by zeroing in on his apparently innocent proposal that checks be cashable by the bearer only upon the bearer’s signing his name and presenting a passbook or identity card.\(^{41}\) (Fichte believed that such signing would avoid counterfeiting.) Hegel harshly criticizes the “closed” medieval money system that Fichte proposes.\(^{42}\) Hegel rarely treats problems of reforming the monetary system\(^{43}\) or of defining the “aura” of monetary tokens.

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43. There are some exceptions. See, for example, Hegel, \textit{Über die englische Re-
in a particular culture; even more infrequently does he make such treatments an occasion for defining the logical place of money per se; yet, in his critique of Fichte, he emphasizes the connection between the logical problem that in Fichte's system of philosophy "the intellect is bound to fall into the making of endless determinations" and the economic dilemma that "in Fichte's state [with its complex series of state-issued passbooks] every citizen will keep at least half a dozen people busy with supervision, accounts, etc., each of these supervisors will keep another half dozen busy, and so on, ad infinitum, [with the result that] the simplest transaction will cause an infinite number of transactions." CROSSREF

Hegel would transform the "financial" procedure of Fichte's formalist logic into a unique and powerful process of philosophic cancellation and redemption. In eighteenth-century commercial discourse and practice, a canceled (aufgehobene) bond or note still had positive value as a receipt or discharge from debt. (Henry C. Brokmeyer uses cancel in both financial and logical senses to translate aufheben in his translations of Hegel's works on logic.) CROSSREF

In Hegelian dialectic the nought of cancellation (Aufhebung) is, like this bond, both null and positive. (Although Aufhebung can denote "cashing in a bond," it can also denote "preservation" and hence "not cashing it in." Thus the inscription in the bottom border of the emergency money depicted in figure 44 cleverly opposes Aufhebung as "preservation of the banknote" to Einlösung as "cashing it in": "Heb' mich gut auf und lös' mich niemals ein!!") In Hegel the nought that is the bond is neither simple negativity,


44. On coinage in Rome, however, see Hegel, Vorlesungen über die Philosophie der Religion, in Werke, 17:169–70; and Hegel, Aphorismen aus Hegels Wastebook (1803–6), in Werke, 2:544.


46. I thank the Missouri Historical Society for making the still unpublished manuscript of Brokmeyer (1828–1906) available to me.
as in Kant, nor apparently simple unity, as in Plato; rather the bond ought to be cashed in, with interest, by the appropriate teller. This “tally-man” is the dialectician.47

3. That the cashiered bond to be cashed in (aufgehobene) is interest bearing brings us to another traditional association of Aufhebung with money, its connection with the institution of monetary interest. The use of Aufhebung to mean “to collect interest of the monetary kind” is as old as the fourteenth century.48 This is one of its principal meanings in the works of Martin Luther.49 In such writers as Schiller, Goethe, and Hegel, the collection of monetary interest is extended conceptually to include “interest of the spiritual or intellectual kind.”50

In Hegelian, as in Platonic, dialectic, economic hypothe- cation informs intellectual hypothesizing: a monetary hypothec (or principal) from which interest is drawn is like a philosophical hypothesis from which a deduction is drawn, and just as mature bonds are homogeneous with the sums of their principals and interests, so dialectical syn-

47. For the role of the tally (Tale) in Fichte’s understanding of absolute knowledge, see Fichte, Darstellung der Wissenschaftlehre (Aus dem Jahre 1801) (in Sämmtliche Werke, 2:17–18); “Beyond all knowing, according to our present representation, freedom and being come together and permeate one another, and only this intimate permeation and identification of the two into a new being brings about knowing—now truly in the form of knowing—as an absolute Tale.”


49. For Aufhebung in Martin Luther as “the collection of interest and of fees for indulgences,” see the German writings of Luther in the Jena edition, pt. 1 (Jena, 1564), 195°, 298°, and pt. 2 (Jena, 1563), 263°. See too Luther’s use of “gleich aufheben mit einem” to mean “beide theile fahren lassen, auf eine linie zu stehn kommen” (Luther, pt. 5 [Jena, 1575], 340°; discussed by Jacob and Wilhelm Grimm, Deutsches Wörterbuch [Leipzig, 1854–1960], s.v. “Aufheben,” 10) and his use of aufheben to mean “aufheben und behalten” (“to pick up and to lay aside for future use”). Keith Spalding (Dictionary of German Figurative Usage [Oxford, 1952–], s.v. “Aufhebung”) discusses Luther, pt. 1, 40°, together with Luther’s translations of Matt. 14:20, Matt. 16:9, Mark 6:43, and Luke 9:17.

theses are, in a way, homogeneous sublations of their hypotheses. In Socrates’ exposition of dialectic in the Republic, this apparent homogeneity between hypotheses and Idea poses no problem, since there is a mythic leap from the partial hypotheses to the Idea figured on his divided line. In Hegel (and in the later dialogues of Plato), however, theory has to confront directly the problem of homogeneity and heterogeneity, of sameness and difference, that motivates every dialectical process.

The Difference

Sub-lation is connected grammatically with difference. Tollo, tollere, sustuli, sublatum borrows its principal parts from fero, ferre, tuli, latum. Thus Hegelian Aufhebung, associated with the Ciceronian and the Thomist sublatio, has the same conceptual relationship to the German proverb “Aufgeschoben ist nicht aufgehoben” (“Deferral is not doing away with”) that the modus tollens has to the Latin witticism “Quod differtur non aufertur” (“Deferral is not removal”). Such grammatical connections and puns, of the kind that Hegel has in mind when he refers us (in his Logie) to the dictionaries, suggest the logical connection between Aufhebung and Differenz that motivates Hegelian dialectic.

This connection between sublation and difference is also apparent in Hegel’s consideration of the concept of truth. Kant, as we have seen, relies on a definition of truth in which the intellectus is supposed to become “adequate” to the res: the pertinent difference between them is annulled (becomes nought) as they become “equal” to each other. Hegel, however, argues in the Phenomenology that truth does not involve “the rejection of the discordance, the diversity, like dross from pure metal, nor, again, does truth remain detached from diversity, like a finished article from the instrument [Werkzeug] that shapes it. Difference itself continues to be an immediate element within truth as such, in the form of the principle of negation.” Thus Hegel attacks those who reject dialectical negation or mediation in philosophy.

51. For the German proverb, see Georg Büchmann, Geflügelte Worte, der Zitatschatz des deutschen Volkes (Berlin, 1927), p. 436; for the Latin witticism, see Arnobius, Commentarii in Psalmos Davidis, Psalm 36.

52. Hegel, Phänomenologie, in Werke, 3:41; trans. Baillie, p. 99. One topos that Hegel attacks—that wisdom is like a pure metal (usually gold)—informs much of the
Hegel himself begins with illusion and negation. "The system of the experience of the spirit," he writes in the Phenomenology, "deals only with the negative appearance [Erscheinung] of the spirit, a spirit that gains its truth only by finding itself in absolute dismemberment" and then "looking the negative in the face and abiding with it."\(^{53}\) Hegel explains the need to focus on negativity by emphasizing the distinction between negativity and the ordinary conception of falsehood. This distinction is summarized by Hegel's description of the process of the generation of truth. "Dissimilarity [Ungleichheit; of knowledge with its substance] is dissimilarity which is an essential moment. Out of this differentiation [Unterscheidung] their identity comes, and this resulting identity is truth."\(^{54}\) This relationship between negativity (or non-identity) and truth, which Hegel posits against nondialectical thinkers such as Kant, is the way by which phenomenology (the "logic of illusion") becomes logic.

Throughout his writings Hegel is careful to distinguish his concept of truth from mathematical and monetary relations. In the Phenomenology, for example, he insists that "true and false are [not] among the determinate thoughts which are considered immobile separate essences, as if one stood here and the other there, without community, fixed and isolated. Against this view, one must insist that truth is not a minted coin [ausgeprägte Münze] which can be given or pocketed ready-made."\(^{55}\) In a fragmentary essay of 1793, Hegel already had claimed that the conventional use of syllogisms and of other logical exchanges constituted a deceptive intellectual currency, and he tried to

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Western tradition in philosophy and mathematics. See for example, François Vieta, *In artem analyticiem isagogae; in Francisci Vietae opera mathematica*, ed. F. van Schooten, Leyden, 1646, p. 1. A few thinkers, however, do argue that truth cannot be separated from falsehood in the same way that gold can be separated or refined from dross. Jakob Bohme, for example, relies on the images of alchemy, but does not believe in the complete separation of the false from the true; and G. W. von Leibniz, in his crucial essay on truth, argues that "distinct notions," while they are like those unreliable ones that "assayers [Docimastae] have of gold," are hardly sufficient for understanding "cognition, truth and ideas." On Bohme, see Hegel, *Vorlesungen über die Geschichte der Philosophie*, in Werke, 20. For Leibniz, see his *Meditationes de cognitione, veritate et ideis [Reflections on Knowledge, Truth and Ideas]*, in *Philosophischen Schriften*, ed. C. J. Gerhardt, 7 vols. (Berlin, 1875–90; rpr. Berlin, 1960), 4:423.


55. Ibid., in *Werke*, 3:40; trans. Baillie, p. 98. For the allusion to Lessing's *Nathan the Wise*, see chapter 6.
distinguish “authentic wisdom” from the “inauthentic” knowledge of “mere argument [Räsonnement].”

Wisdom does not begin from concepts with a “mathematical method,” and arrive at what it takes for truth through a string of syllogisms [Schlüffen] like Barbara and Baroco—it has not purchased its conviction at the general market where they give out knowledge to everyone who pays the fair price, nor would it know how to pay for it in the current hard cash [in blanker Münze] that gleams on the counter—it speaks rather from the fullness of the heart.56

The syllogistic inferences that the pietistic young Hegel singles out for special attention—Barbara and Baroco—are associated with the modus tollens and with the problems of negativity and differentiation in general.57

In dismissing the traditional use of syllogistic inferences, Hegel would raise himself above (and/or erase) the conventional distinction between the genuine and the counterfeit. It is Hegel’s conviction in the Phenomenology that “counterfeit instead of genuine coin may doubtless have swindled individuals many a time . . . but in the knowledge of that inmost reality where consciousness finds the direct certainty of its own self, the idea of [such] delusion is entirely baseless.”58 Hegel argues that truth can be separated from falsehood no more than an instrument can be separated from the finished product that it helped to make. The two parts of being are interrelated in a way different from that of oil and water in a heterogeneous mixture. “The false,” writes Hegel, “is no longer something false as a moment of the true.”59


57. “Barbara” indicates the mood AAA in the first figure of syllogisms, M—P / S—M // S—P. “Baroco” indicates the mood AOO in the second figure of syllogisms, P—M / S—M // S—P. The proper names are mnemonic devices from a hexameter verse that aids the student to remember the nineteen “valid” syllogistic modes. Cf. Wilhelm T. Krug, Allgemeines Handwörterbuch der philosophischen Wissenschaften (Leipzig, 1832), s.v. “Schlußmoden.” All second figures, including Baroco, must have a universal major, premises opposed in quality, and a negative conclusion; they are thus associated with the modus tollens. Second figures, such as Baroco, may seem to be reduced to (or exchanged for) first figures, such as Barbara.


The motive force of the Phenomenology is the inequality or dissimilarity that obtains in consciousness between the Subject and the Substance. This negative force allows Hegel's system (and, as Marx also suggests, the systems of the Greek atomists) to begin, by arguing modus tollens, with a consequent falsehood:

A so-called fundamental proposition or first principle of philosophy, even if it is true, is yet none the less false just because and in so far as it is merely a fundamental proposition [Grundsatz], merely a first principle. It is for that reason that it is easily refuted. The refutation consists in bringing out its defective character; and it is defective because it is merely the universal, merely a principle, the beginning. If the refutation is complete and thorough, it is derived and developed from the nature of the principle itself, and not accomplished by any other counter-assurances [Versicherungen] and chance fancies.

The refutation of a first and false principle is both positive and negative. That the truth must always be realized in this form is expressed in the idea that "represents the Absolute Spirit—the grandest conception of all." This absolute, alone and without the counter-assurances of a credit economy, replaces both the Kantian zero and the Platonic One, which Hegel discusses as the two major precursors to his dialectic.

Putting Hegel Down

The remarkable tension in Germany between the development of thought and that of material production—and, I think, of financial reckoning, or calculation—helps to explain German philosophers'
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fascination with the relationship between money and ontology and it elucidates the influence of the economists James Steuart and Adam Smith on Kant and Hegel. Monetary theory ties together symbol and commodity, as well as universal and particular, in a knotty conception of the relationship between thought and matter. (Thus Hegel, in The Philosophy of Right [1821], presents a theory of money, and of the contemporary problem of paper money in particular, which involves the dialectic of symbol and commodity.) Tension between the development of thought and that of material production, however, does not explain away dialectic. My reference to historical contexts—the development at the same time and place of both coined money and Greek dialectic, for example, Brahmagupta's discovery of dialectical negativity in the credit economy of India, and Al-Khowārizmi's discovery of algorismic algebra among a people uniquely concerned with inheritance shares—is not meant to put dialectic down to material condi-


66. Like Adam Smith and Kant, Hegel argues that "money is not one particular type of wealth amongst others, but the universal form of all types so far as they are expressed in an external embodiment and so can be taken as 'things'" (Hegel, Philosophie des Rechts, in Werke, 7:467; trans. Knox, pp. 194–95). Hegel also insists that "a bill of exchange . . . does not represent what it really is—paper; it is only a symbol of another universal—value. . . . Money represents any and every thing, though since it does not portray the need itself but is only a symbol of it, it is itself controlled by the specific value [of the commodity]. Money, as an abstraction, merely expresses this value" (Hegel, Philosophie des Rechts, ed. Eduard Gans, in Hegel, Sämtliche Werke: Jubiläumsausgabe in zwanzig Bänden, ed. Hermann Glockner [Stuttgart, 1964], 17:119; trans. Knox, p. 240). Cf. Hegel, Philosophie des Rechts, nach der Vorlesungsnachricht von H. G. Hotho, 1822/23, in Vorlesungen über Rechtspolitik, 1818–31, ed. Karl Heinz Ilting, 6 vols. (Stuttgart, 1973–), 3:234–43. In the Rechts-, Pflichten- und Religionslehre für die Unterclasses (1810ff.) (in Werke, 4:240), Hegel discusses money as die allgemeine Ware and as "abstract value."

67. There are many other instances, for example, "the modern sign of . . . equality [which was] first used in [a book] of [Robert] Recorde that is dedicated to the 'governors and the rest of the Companio of Venturers into Moscovia' with the wish for 'continualle increase of commodities by their travell'" (Robert Recorde, The Whetstone of Witte [London, 1556]; cf. Simon Stevin, De thiende [Leyden, 1585; facsimile rpr., The Hague, 1924]). The position that mathematics follows trade is expressed by Edgar Zilsel ("The Sociological Roots of Science," American Journal of Sociology 47 [January 1942]: 547), who argues that the "classical mathematical tradition . . . could be revived in the sixteenth century because the new society had grown to demand calculation and measurement." Cf. Alexander Koyré, Newtonian Studies (Cambridge, Mass., 1965), pp. 5–6.
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tions. Even when historically accurate and inclusive, such observations differ from, and may even obscure the way towards, accounting thoughtfully for idealist dialectic.

Ideology, or the study of the expression of the connection between spirit and matter, generally focuses, as does Henri Storch in Course of Political Economy (1815), on the relationship between “internal goods [biens internes] or elements of civilization” and “material goods, components of material production.”68 (It includes consideration of how the material interests of a particular class are expressed or promoted through religion and philosophy: Jean-Jacques Rousseau in his Discourse on the Origin and Foundations of Inequality among Men [1755], for example, studies how the dogmas of the priests support the institution of private property;69 David Hume in A Treatise on Human Nature [1739] interprets property as a “species of causation”70 and Moses Hess in Twenty-One Sheets from Switzerland [1843] associates the “estrangement” of all the physical and mental senses, which he remarks in modern European civilization, with capitalist ways of “having” and “alienating” properties.)71 Within a decade of Hegel’s death, many students of ideology concentrated their focus on specifically monetary “alienation”: the reactionary Wilhelm Schulz in The Movement of Production (1843),72 for example, and the radical Moses Hess, who, in his remarkable “On the Essence of Money” (1844), initiated a systematic study of spiritual money (geistiges Geld) rather than material money, money of the person rather than money of the purse.73

68. Henri Storch, Cours d’économie politique, ou Exposition des principes qui déterminent la prospérité des nations, ed. with notes by J.-B. Say (Paris, 1823), 3:217. Among the analogies between spirit and matter adduced by Storch is the one that “internal goods are susceptible of being accumulated like wealth, and of forming capitals that can be used in reproduction” (3:236). Cf. Karl Marx, Theorien über den Mehrwert, MEW, 26.1:258; translated as Theories of Surplus Value, trans. Emile Burns (Moscow, 1975), 1:286.
71. Moses Hess, Einundzwanzig Bogen aus der Schweiz, pt. 1 (Zurich, 1843), p. 320. Hess suggests that in modern society “an object is ‘ours’ only when we have it—when it exists for us as capital or when it is directly eaten, drunk, worn, inhabited, etc.”
72. Wilhelm Schulz (or Schulz-Bodmer), Die Bewegung der Production (Zurich, 1843).
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In "On the Essence of Money," Hess considers the interrelations among money, language, and German philosophy, arguing that in German thought "God is merely idealized capital, and heaven the theorized merchant world" and suggesting that "theological and philosophical speculation will cease only with the cessation of commercial speculation, and only then will religion give way to genuine politics." Karl Marx, adopting Hess's words and arguments, attempts to state some of the general and supposedly necessary similarities between negativity and monetary alienation that would help to explain such tropes as _adequatio_ and _Aufhebung_. In his sweeping "Critique of Hegelian Dialectic and Philosophy as a Whole" (1844), Marx attempts to do to Hegel what Hegel did to Kant, or, rather, he attempts to do more. "[Hegelian] logic," writes Marx, "is mind's coin of the realm [das Geld des Geistes], the speculative or thought value of man and nature—their essences grown totally indifferent to all real determinateness, and hence their unreal essences." And, in an afterword to _Capital_, Marx explains that "with [Hegel, the dialectic] is standing on its head" and that he is trying "to turn [the dialectic] right side up again."

If Marx's attempt literally to put down Hegel were to prove wholly


78. As "picking up" is one literal translation of _Aufhebung_, so "put-down" is one literal translation of _hypothèse_ ("hypothesis").

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appropriate, it would have to outdo Hegel in the same way Hegel began to outthink traditional logic. In his *System of Ethical Life* (1802–3), Hegel already had defined money as a middle term that makes for “the indifference of all labor,” and, in his *First Philosophy of Spirit* (1803–4), he called money an abstraction of need and labor that makes for a “monstrous system,” or “life of the dead body,” which requires “continual dominance and taming like a beast,” a taming that Hegel’s State would accomplish much as would Marx’s communist society. And, following in the wake of Kant and Fichte, Hegel tried, in his *Philosophy of Right* (1824–25), to explain money as one expression of reason.

This study of *Aufhebung* in Kant and Hegel is not the place to settle the Marxist claim to have surpassed philosophy. As that claim appears in “The Critique of Hegelian Dialectic and Philosophy as a Whole,” in *Capital,* and elsewhere, however, it is certainly misleading. Thus many thinkers, following what they interpret to be Marx’s lead but ignoring the significance of the differences between the kinds of oppositions and sublations that we have considered, assert that “mind’s coin of the realm” plays no part at all in their own thinking. They fail even to inquire whether some money of the mind, like the one they suppose to pervade Hegelian logic, participates in their own supposedly superior dialectics. Marx’s critique of Hegel may fail to acknowledge


82. For example, Louis Althusser (*Essays in Self-Criticism,* trans. Grahame Lock [London, 1975], pp. 178–79) asserts a clear boundary between “the category of origin [that gives] classical bourgeois philosophy . . . from Descartes to Kant . . . the means of guaranteeing its ideas” and genuine “dialectic.” “When you reject the category of origin as a philosophical issuing bank,” writes Althusser, “you have to refuse its cur-
Hegel's critiques of Kant and Fichte, but it does warn that the thinking which fails to account for or even to encounter its own internalization of economic form remains insensitive to a sting that goads thought into becoming philosophy and, perhaps, into surpassing it.

Althusser admits that Hegel and Marx not only "refuse[d]" but also "transformed and reintroduced . . . the use and guarantee of the categories of Origin and Subject," yet he does not observe, in their reformation of Kant's "issuing bank," a money of the mind like the one that informs his own purportedly "self-critical" thinking and that his own financial troping—philosophical "circulation," for example—helps to indicate.