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### **What is Information Worth?**

In *Art and Value*, Dave Beech argues that it is not the case that art has been pervasively commodified, contrary to the claims of “culture industry” theorists such as Adorno. Rather, Beech shows, artistic production tends to take place outside of the sphere of productive capital, and tends not to be done by laborers who perform abstract labor, i.e. labor whose value-producing capacity is indexed to a socially average level of productivity. The production of works of art, that is to say, tends not to be formally or really subsumed by capital and tends not to be undertaken by wage laborers whose surplus labor yields profit for capitalists. Once one grasps the full import of Beech’s negative thesis, one becomes a far more cautious and far less credulous reader of the inherited corpus of Marxian aesthetics, which has a propensity to deduce (what Beech reveals to be) highly dubious political and cultural consequences from patently untenable economic premises.

It should be noted, though, that Beech’s negative thesis has a purposefully restricted scope. “Art,” for Beech, refers to something quite specific: namely, contemporary works of visual and plastic art produced for display in museums and galleries and destined for the attentive contemplation of the kinds of people who patronize museums and galleries. Within that delimited frame of reference, Beech’s claim that artistic labor is not productive labor (in Marx’s technical sense) is undeniable. It is so obviously the case that art of that sort is not produced and exchanged in the way that commodities are typically produced and exchanged within the circuit of capital accumulation that one wonders how Marxist aestheticians could ever have been confused on this point.

But, needless to say, the term “art” has a much wider extension in common usage than the one Beech assigns to it. Thomas Kinkade prints are “art,” according to the more inclusive, everyday understanding of the term, and so are Hollywood blockbusters, top-40 radio songs, sitcoms on network television, and advertising spreads in *Cosmopolitan* magazing—even if artist and critics have their reasons for wishing to withhold the honorific “fine art” or “genuine art” from these kinds of cultural objects.

Part of what this illustrates is that “art” is not a very clean-cut category. It therefore cannot be expected to have a very consistent, much less invariant, relation to the prevailing system of value production. Thus the question “how is art produced under capitalism?” is not one that can be given a single, concise answer, because there is no one way (nor even a manageably small collection of ways) in which the making of art intersects with (or stands apart from) the making of value. The precise artistic product (or sphere of artistic production) in question needs to be specified and particularized so that an investigation of its (perhaps singular) status and function within the capitalist totality can be carried out. And there is no guarantee that the results of this investigation will have broad applicability to other kinds of art-making.

For those reasons, I want to abruptly shift the focus from *art* to *information*, which is in some ways a more analytically tractable concept than *art* and which has (not coincidentally) been much more regularly discussed by economists. By information I mean things like “codes, concepts, formulas, data, design, images, software, language, etc.” (Rigi)—in other words, semantically significant symbols that can be instantiated in various material media. For example, the information conveyed by the word sequence “the cat is on the mat” can be instantiated on a computer screen or on the printed page. Information that is digitally reproducible and transferable (which, arguably, not all information is) is the interesting and important phenomenon that enters into my deliberations here. I take it to be uncontroversial that at least some things that it is customary to think of as art, such as the songs that went on the latest Justin Bieber album, are also aptly categorized as instances of digitally reproducible information. From one perspective, a song just is (or can usefully be conceived of as) an abstract sonic pattern that can be encoded or represented by a particular sequence of 1s and 0s. Answering some questions about the relation between digital information production and value production may thus shed some light on the nature, under capitalism, of at least some artistic production.

The question I want to tackle is: is such information *valuable*? Can a piece of information be a commodity in which labor-time is congealed? That is to ask, is the labor that produces information productive of value and surplus value, or does the price that is carried by information commodities represent value that is parasitically siphoned off from some other value-productive sector of the economy, as is the case with the price of rent on land? I will here argue against the position that information-producing labor is necessarily unproductive labor. I have what I take to be a properly Marxist conviction about information: whether information has value or not depends on the circumstances and context of its production and exchange, not on the intrinsic nature of the thing itself. Items are not saleable or unsaleable, valuable or valueless, *per se*, but are so only *in situ*. I will argue against those who argue that information is valueless by appealing to the allegedly special ontological condition of information.

To do this, I will assess Jakob Rigi’s recent account of the valuelessness of information. Rigi’s defense of the view that digital information is valueless has the virtues of being 1) clearer and more explicit than any other statement of the position in the literature, and of being 2) elaborated within a Marxian framework that affirms Marx’s labor theory of value. Unlike theorists such as Negri who believe that the rise of a *sui generis* information economy proves that the law of value has gone into abatement, Rigi correctly holds that “late capitalism” continues to be what capitalism has always been: a system in which total value-added is a function of the aggregate amount of socially necessary labor time performed, and a system in which competitive mechanisms guarantee that surplus value is distributed (on average) according to magnitude of investment ( $c+v$ ). Rigi draws out some far-reaching implications concerning global value production from the proposition that information is intrinsically valueless. In showing this proposition to be false, I demonstrate that if we are going to believe conclusions like Rigi’s, we will need different reasons than the ones he gives us.

## Rigi's Arguments

Rigi states the core of his argument for information's valuelessness in "Foundations of a Marxist Theory of the Political Economy of Information" (2014):

"According to Marx's theory of value, the value of information tends to zero. The reason for this is that information can be reproduced at almost zero cost. For example, if the labour time that is required for writing software is 100 hours and the time required for copying it is five minutes, its value is determined by 5-minute labour time, which is negligible. The reason for this is that the value of a commodity is determined by the socially necessary labour time for its reproduction. In the case of information this time is the socially necessary time for copying it...Thus in the case of our software the 5 minute copying time determines the social labour necessary for the production of software, not the initial 100 hours spent on the production of the first original copy."

First let me make a quibble about wording: I haven't the faintest idea why Rigi thinks that five minutes of labor time for the production of an individual commodity is "negligible." I'm not an econometrician, but even if we conservatively estimate the Monetary Expression of Labor Time to be \$20, five minutes of labor represents \$1.66. This is almost exactly the cost of a box of Kleenex, which is nothing to sneeze at. More substantively, the price of the unit commodity is something of a red herring in the context of a discussion about whether the relevant labor process produces value or not, because the value of the unit commodity is derived by dividing the total value produced by the number of units produced, and will thus depend on how the unit is (more or less arbitrarily) defined. In other words, the amount of new value produced and old value transferred, which is a function of the amount of living labor set in motion and the amount of dead labor stored in the means of production, is logically and explanatorily prior to the way this mass of value is prorated across the quantity of individual physical use values produced. A single plastic grocery bag has a "negligible" exchange value, but this doesn't tell us anything about whether the plastic bag industry is not productive, or is not very productive, of value.

I will return to the issue of the explanatory priority of total value over per-unit value after examining the core of Rigi's argument.

Rigi's contention that digital information is valueless hinges on three main premises: 1) that reproduction time determines commodity value; 2) that the reproduction of digital information consists in its copying; and 3) that copying information takes very little time. From this it is supposed to follow that digital information has very little--effectively zero--value.

What is *reproduction* as opposed to *production*? To say that *reproduction* time, rather than *production* time, determines commodity value is to say that a given commodity, no matter when it was produced and no matter what level of productivity it was originally produced at, *de facto* contains whatever amount of value is contained by the same type of commodity produced at the *current* prevailing level of productivity. As Rigi writes:

“[T]he average social productivity of all producers determines the amount of socially necessary labour time that congeals as value in the product. In order to produce cheaper, and thereby acquire a greater share of the market, individual capitalists increase the labour productivity of their own enterprises. This in its turn leads to the growth of the average social productivity of all enterprises that produce a certain commodity. As a result the socially necessary labour time for the production of the commodity, and thereby its value, decreases. If there is a stock of a commodity previously produced under a lower labour productivity, its value depreciates. Now, it has a value as if it has been reproduced under the new higher labour productivity.”

Hence reproduction, in the Marxian scheme, refers to the production that went on in the *most recent production cycle*. Accordingly, the proposition that the reproduction of information is its copying, together with the claim that reproduction time determines value, implies that the amount of (socially necessary) labor time occupied by the copying a piece of digital information (as opposed to the amount of time it takes to invent or create the information in the first place) is what establishes the current prevailing level of productivity for producing that piece of information, and thus establishes the exchange value of it *qua* commodity. Copying and transferring files, so the story goes (I am spelling it out a bit more than Rigi does), reproduces information commodities in the sense that the copy-transfer process is what is responsible for bringing new articles of that commodity-type into existence: by virtue of the fact that the software is transferred to your computer, a new instance (*your* copy, as opposed to someone else’s copy) of Microsoft Word is caused to exist. Note that this needn’t be conceived of as spooky or incorporeal or somehow non-physical: buying Microsoft word amounts to paying to have your computer be put into a different physical state, i.e. whatever configuration of silicon and electrons allows it to successfully run Microsoft word.

The key move in Rigi’s valuelessness argument is the assertion that information reproduction (digital copy-transfer), owing to what he (problematically, as we shall see) views as the unique quasi-immaterial nature of the information commodity, takes a negligible amount of time, unlike the reproduction of other types of commodities:

“While the values of other commodities decrease gradually and as a result of the growth of social productivity that of a piece of information decreases immediately and infinitely in the very moment that production of its first instance is completed and this happens regardless of the general level of social productivity. The reason is that at that very moment it can be reproduced at a negligible extra cost. Therefore, although a product of labour, information’s value approximates to zero...The particularity of the digital reproduction of information consists in that it frees information from a particular material body and, therefore, its cost tends to zero.”

Another terminological objection is in order at this point. This is that the value of information does not and could not decrease *infinitely*, since this means that it would more and more negative without limit. What Rigi means to say is that the value of information decreases *much as is possible*, and thus (as he puts it elsewhere) “approximates to 0,” “tends to zero,” or “is almost 0,” as soon as it is the case an extra unit of information “can be reproduced at almost zero cost,” which happens the moment the initial (costly, labor intensive) production process--which involves research and development, writing code, etc.--is complete. Note that the claim that the value of a unit of information tends to zero is importantly different from the

claim that “the value of sold information *is* 0,” even though Rigi uses these interchangeably. A huge number of units of a nearly valueless commodity could collectively be worth a lot; but a huge number of units of an absolutely valueless commodity could not be worth a lot. Notice also that the claim that the value of a unit of information “tends to 0” in fact *presupposes* a productive cycle in which value got transferred/created in the first. This is because the scenario in which the value of the unit commodity decrementally tends to zero is a scenario in which the number of use values increases as the amount of value originally produced (thus the amount of labor expended in production) is held constant. This is a common occurrence. Mainstream economists use the term “non-rivalrous” to describe a commodity that is such that, for any level of production, the cost of providing it to a marginal (additional) individual is zero. But the fixed costs of producing non-rivalrous goods, unlike the marginal costs, may well be non-trivial, and may well be constitutive of value in Marx’s sense. Consider a concrete example. The per-unit value of a pay-per-view boxing match “tends to zero” as the number of subscribers increases. This is because the relevant “unit” of this commodity is the boxing match appearing on a specific subscriber’s TV. But the relevant value-determining entity in this case is not each individual instance of viewing (which comes closer and closer to being valueless the more of them there are). The relevant entity, in the context of the measurement exchange value, is the broadcastable boxing match *in toto*. What matters is not the marginal cost (which is negligible) but the *total* cost (paying the boxers, setting up the transmission, renting the arena, etc.), which is non-negligible. As far as I can see, it is not problematic to proceed under the assumption that the nondisaggregated commodity batch (which can later be analytically decomposed into unit commodities) possesses a value that straightforwardly corresponds to the number of hours of (socially necessary) labor that went into producing all of it. This *totum* of value is given prior to, and is not affected positively or negatively by, the number of parts (commodity units) across which it ends up getting divided.

The unwarranted conclusion that information is valueless leads Rigi adduce a number of hypotheses about the role of information production in the functioning of global capitalism:

1. Information profits are a form of rent extraction. Information, like land, is both valueless (since its price “tends toward 0”) and scarce (artificially, by virtue of intellectual property laws), and the owners of information add no surplus value to the global total, though they do withdraw value from the pot by receiving profits for leasing a valueless item to others.
2. Thus massive growth in the information sector (post 1980) served to increase the global organic composition of capital, since information production requires investment but generates no surplus value.

“Information production contributes to the tendential fall in the rate of profit. The expansion of the role of information in the economy undermines the general rate of profit of the total social capital in two ways. First, the rentier capital that produces and sells information receives a considerable amount of the total social surplus value in the form of rent without itself contributing to this total surplus value. Second, the capital which is invested in automated and semi-automated information-intensive manufacturing and services, if it produces surplus value at all (the fully

automated firms do not produce surplus value), contributes far less surplus value to the total social surplus value than the amount of surplus value that it receives back as profit from this total fund.”

3. Information production is a cause of uneven development and is a form of economic imperialism, since information profits are made at the expense of highly surplus-value-generating, labor intensive agricultural and extractive industries largely in the global south.

“Research and development and the production of advanced technologies and services have overwhelmingly, though not exclusively, been concentrated in a handful of advanced capitalist countries. On the other hand, less advanced manufacturing and agriculture has dramatically expanded in Third World countries. Thus, a major portion of the total global surplus value is produced outside the territory of advanced capitalism. Advanced capitalist countries suck a significant share of this [peripheral] surplus value in the forms of surplus profit and rent-tribute by means of trade secrets and intellectual property. In this way the concomitant enclosure of information and extraction of surplus value underpin the information dimension of imperialism.”

4. The information economy shows that the obsolescence of value as a goal and regulator of production.

“That the value of information tends towards zero while information technologies constitute the vanguard forces of production of our time means that the law of value is obsolete. However, in spite of its historical redundancy this law still dominates the world economy. This domination suffocates the expansion of commons of information on the one hand and destroys nature on the other. This unprecedentedly heightened contradiction between the forces of productions (humans, information and nature) and relations of production (the law of value) is a call for abolishing of capitalism.”

This all sounds grand and important. But these weighty results are only as credible as the proposition that digital information is valueless. I have already presented a plausible alternative sketch of what might be going on. Next I call into question Rigi’s reasons for believing that information is valueless, which should make my alternative sketch seem all the more appealing.

### ***Reproduction is not the right concept for understanding digital copying***

As Rigi correctly notes, intellectual property laws are a major obstacle that prevents digital information from being universally shared. And it is certainly the case that if digital information were universally obtainable with negligible effort, it could not function as a commodity and could not behave in a market economy as a bearer of exchange value.

But how do we get from these intuitively correct, almost self-evident claims to the claim that digital information is *in fact* reproducible at a negligible cost and thus has a value of 0? What we are entitled to believe on the basis of the intuitive claims is a counterfactual conditional, namely: if it were the case that no intellectual property laws (or other legal/cultural barriers to copying/sharing) existed, it would be the case that digital information could not command a price, because nobody would be willing to pay for it. This is precisely the counterfactual state of

affairs whose occurrence intellectual property laws are meant to prevent. But Marx's notion of reproduction is not counterfactual. He holds that commodities have a value that is determined by the most recent *actual* process of production, not by a possible but non-actual process of production, one that just might happen if things were different than they are. It is just as true that digital information *could be* obtained at no cost, were it the case that the intellectual property regime was negated, as it is true that diamonds *could be* obtained at no cost, were it the case that we could pick diamonds from our noses. But these counterfactuals have nothing to teach us about the value of information or diamonds.

The claim that reproduction time determines commodity value has a very specific meaning for Marx: he means that the time that it *now* takes a capitalist to produce a commodity determines the amount of value contained in all commodities of that type that are currently in stock, even those that were made at a lower level of productivity and that thus used to contain more value. The amount of value contained in these older, low-productivity, high-unit-value goods is reduced once the a newer batch of high-productivity, low-unit-value goods is yielded by a more efficient process of production. To reiterate: all that is meant by "reproduction" is *the most recent round of production undertaken by a capitalist firm*. Reproduction is a retrospective notion; it concerns what took place in the (immediate rather than more distant) past, not what will or might take place at some point.

Moreover, reproduction, as described in Marx's discussions of growth in industrial productivity, is a process that takes place fully within the circuit of capital accumulation. This raises questions about whether Marx's concept of reproduction is at all applicable to the copying/sharing of digital files as described by Rigi. Take the case of the digital copy-transfer of a computer program like Microsoft Word. Reproduction of the program, in the strict Marxian sense, would have to mean *the most recent round of production of the software, as a commodity, by a capitalist, for the market, at the up-to-date level of production*. Is this the right way to think about what goes on when Microsoft Word is digitally copied and transferred? I presume that the digital copy-transfer of Microsoft Word can happen in exactly two ways (assuming the enforcement of intellectual property laws):

1. Microsoft makes Word available to a customer (who pays to gain access to the file).
2. The software is illegally pirated.

The second case is obviously not a case of capitalist production at all, and ergo not a case of reproduction, in Marx's sense. Hence it is just orthogonal to the issue of how reproduction determines value. Suppose someone figures out a quick and foolproof way to steal cars from dealerships, and that this method of theft is suddenly widely adopted. It would be bizarre, from a Marxian perspective, to describe this as a situation in which the labor of stealing cars is a process of "reproduction" that lowers the value of cars. Value is determined by the labor that goes into producing in order to sell, not the labor that goes into stealing in order to have. Indeed this is why what Marx calls "primitive accumulation" is not the accumulation of *value*.

Now take the the first case, in which Microsoft transfers a digital copy of Microsoft Word to a paying customer. It is more natural to understand this an act of distribution as opposed to an act of production. In transferring the file to a paying customer and granting the customer legal entitlement to use it, Microsoft is by all appearances engaging in the circulation of an already produced good, albeit a good of which it has a functionally limitless supply, and a good whose circulation does not require literal spatial relocation of a concrete object.

A true reproduction process of Microsoft Word, in the strict Marxian sense, would have to involve a capitalist firm undertaking the productive process that would *allow the firm to provide consumers with access to a commodity that is sufficiently similar to Microsoft Word as to be substitutable for it*. Microsoft does not need to undertake any such process, because it already completed one. Another such process would be redundant--which goes to show that when Microsoft transfers Word to customers, what it is engaging in is circulation, not reproduction. But a competing firm would be in the position of needing to undertake such a process if it wanted to produce a comparable, more or less fungible commodity, and this process would entail the kind of research and development, code writing, etc., that went into Microsoft's creation of Word originally. But it goes without saying that this would not be a reproduction process that requires a negligible amount of labor, and thus would not be one that causes the value of the information commodity to "tend to zero."

Succinctly: of the two cases, pirating Microsoft word and actually reproducing (something sufficiently similar to) Microsoft word, the first is not reproduction and has nothing to do with value, and the second cannot be done at a negligible cost and thus does not show that digital information is worthless.

It may well be the case that information-producing capitalist firms suck up value from other labor-intensive, highly value-productive spheres of the economy. This would be the case if these firms received more profit than corresponds to the amount of surplus value they produce. But we already knew this, and it isn't peculiar to digital capitalism: it is true of any capitalist firm, productive or unproductive, that it is "parasitic" in this sense if it takes more from the common pot of total surplus value than it puts in. It is not at all clear how to best to figure out whether this is what happens with companies such as Google and Microsoft. The data available isn't calculated in value terms. But we can rest assured that the question will *not* be settled by appealing to fictional states of affairs (such as the abolition of intellectual property) or to the ontology of information.