This analysis of Herbert Marcuse's appropriation of the argument concerning the “mathematization of nature” in Edmund Husserl’s Crisis of the European Sciences and Transcendental Phenomenology shows that Marcuse and Husserl both assume that the perception of real, concrete individuals in the lifeworld underlies formal scientific abstractions and that the critique of the latter requires a return to such qualitative perception. In contrast, I argue that no such return is possible and that real, concrete individuals are constituted by the relation between a given perception and its horizon. In this manner, Marcuse’s social critique can be combined with Husserl’s theoretical-perceptual one, making possible an ecological critique.
1. Introduction: Crisis of Reason, Critical Theory, and Phenomenological Recovery

Herbert Marcuse argued that the social configuration of science and technology in late capitalist society has become not only a mode of thinking or practical action, but the encompassing form of a “world” in which “the world tends to become the stuff of total administration, which absorbs even the administrators.”¹ In One Dimensional Man, he supported this argument by drawing on Edmund Husserl’s Crisis of European Sciences and Transcendental Phenomenology. In particular, Husserl’s text allowed Marcuse to substantiate the thesis that “science, by virtue of its own method and concepts, has projected and promoted a universe in which the domination of nature has remained linked to the domination of man.” (ODM, 166)

The crisis of reason, as Husserl understood it, was also a “crisis of European humanity itself in respect to the total meaning of its cultural life, its total existence”.² The origin of this crisis lay with the “mathematization of nature,” stemming from Galileo, in which quantitative, formal reason was substituted for immediate experience in the understanding of nature. The linkage between reason and a whole cultural existence in Husserl’s view lay in the historical entelechy of reason in the spirit of Europe.³ His inquiry was thus turned away from asking what features of the contemporary lifeworld provoke, reinforce, modify, or mitigate the crisis of reason, inquiring instead into the rational spirit of Europe. By contrast, Marcuse took issue with the notion that phenomenological philosophy, or indeed any philosophy, could heal what he deemed above all a social, eco-

¹ Herbert Marcuse, One-Dimensional Man (Boston: Beacon Press, 1968), 169. Hereafter referred to parenthetically in the text as ODM.
nomic, and political crisis.\textsuperscript{4} It is thus precisely a turn toward the contemporary lifeworld and its provocation of a crisis of reason that characterizes Marcuse’s work in distinction from Husserl’s.

Nonetheless, the crisis of reason as explained by Husserl and utilized by Marcuse is an important point of connection between phenomenology and Critical Theory.\textsuperscript{5} Accordingly, any attempt to think through the contemporary significance of these two philosophical traditions of critique must focus on the accounts of crisis of reason whereby they come into contact.\textsuperscript{6} The intention of this article is to address this common locus in order to develop the philosophical ground of a socio-ecological critique today—a socio-ecological critique that, as I will show, is incipient in Marcuse’s contribution. I will thus claim that, despite his misinterpretation of Husserl’s text, Marcuse’s concept of one-dimensionality offers a valid contribution to the phenomenological critique begun by Husserl. However, I will also suggest that the resolution of the issue of the crisis of reason addressed by Marcuse and Husserl requires a more rigorous phenomenological foundation than that provided by Marcuse. I will therefore rely on Husserl’s analysis to develop two themes left unresolved in Marcuse’s account: (1) an adequate account of the relationship between the theoretical technique of formal sign-systems and the utilization of material techniques in the lifeworld; and (2) of the sense in which concrete intuition and constituent


\textsuperscript{5} Dermot Moran has asserted that Husserl investigated what Marcuse termed one-dimensionality without, however, a detailed analysis of Marcuse or his relation to Husserl in Husserl’s Crisis: An Introduction, 300.

subjectivity—upon which both Marcuse and Husserl depend—can restore meaning and value to Galilean science.

Thus, this article does not only aim at providing a satisfactory account of both Marcuse’s valid utilization as well as his misinterpretation of Husserl’s work, and neither does it merely aim to substantiate Marcuse’s account as a valid development of phenomenology. This article also aims at advancing our comprehension of the social and philosophical consequences of the crisis of reason that is their common locus of reflection. In other words, it is aimed at the “things themselves” and not merely at the textual traces of prior such attempts. Husserl claimed that the concept of the lifeworld, though it appears in the first place as “merely a problem of the fundamental basis of the objective sciences,” has become “the genuine and most universal problem.” (CES, 134) It is this concept that allows Marcuse to argue that the scientific-technological influence has become, in late capitalist society, a closed world. My resolution of the issue between Marcuse and Husserl depends in large part upon distinguishing among the three different senses of the lifeworld.

2. Marcuse’s Appropriation of Husserl’s Crisis in One-Dimensional Man

One-dimensionality, in Marcuse’s thinking, refers primarily to the loss of the transcendence of reason over social life such that social life becomes exempt from social criticism. This “paralysis of criticism,” as he phrases it, has social, cultural, social-scientific, and philosophical dimensions. (ODM, ix–xvii) As he put it in an early summary of the thesis of one-dimensional man, “an entire dimension of human reality is therefore suppressed; the dimension which permits individuals and classes to develop a theory and technique of transcendence by which they might envisage the ‘determinate negation’ of their society.”7 It is not so much a critique of society as a meta-critique, that is to say, it attempts to show that the conditions for social critique have been eviscerated. Recovering such conditions

7 Herbert Marcuse, “From Ontology to Technology,” in Philosophy, Psychoanalysis, and Emancipation: Collected Papers of Herbert Marcuse, Vol. 5, (ed.) D. Kellner and C. Pierce (London: Routledge, 2011), 132. It is interesting that this paper, first published in French in 1960, summarizes the ideas developed in a course at the École Pratique des Hautes Études in 1958–59 and contains no reference to Husserl. One may surmise that it was the addition of Husserl’s Crisis to the analysis that allowed the thesis to appear in finished form in One-Dimensional Man.
is a prior task upon which the practice of Critical Theory depends. To the extent that phenomenology might establish the conditions for the exercise of critical reason, it would become essential to the project of Critical Theory.

The key chapter six of One-Dimensional Man attempts to show that the social analysis of one-dimensional society in the previous chapters does not remain a merely external influence on Galilean science but pertains to its internal conceptual structure. It is here that Marcuse’s thesis both depends on and attempts to extend Husserl’s thesis of the crisis of the European sciences, though focusing on the relationship between science and the lifeworld instead of relying on a European entelechy of reason. On the whole, this chapter evaluates what forms of contemporary philosophy measure up to its historical task of judging society through transcendent reason. Marcuse considers the philosophy of contemporary physics (Max Born, Werner Heisenberg, Karl Popper, etc.), which he claims limits itself to a purely operational context, and then leans on Heidegger’s philosophy of technology, as well as Marx’s remarks on machines, to claim that technics has become a historical world. He goes on to suggest that social reality is more than simply an external influence on science, proposing that scientific rationality develops within an “instrumentalist horizon.” (ODM, 157) In this context, he refers to Horkheimer and Adorno’s remark in Dialectic of Enlightenment that it is the rationalization of labour that connects the elimination of qualities in science and everyday life. Nevertheless, he does not explicitly endorse this suggestion, but immediately poses the relation between science and social quantification as a question. He considers Jean Piaget’s genetic epistemology in some detail to conclude that, while it correctly connects the internal structure of science to practical action, it nevertheless conceives of practical action in too psychological and biological a manner. (ODM, 162) Marcuse then turns to Husserl’s Crisis to substantiate his thesis that “modern science is the ‘methodology’ of a pre-given historical reality within whose universe it moves.” (ODM, 162) We can thus see that in chapter six of One-Dimensional Man, Marcuse attempts to give an account of the relationship between science and social domination that is, at least in general terms, consistent with that of Horkheimer and Adorno but does not rely on it, or on their sources, for its validity. Rather, it is the appropriation of Husserl that serves as justification for his thesis. So, if this appropriation were to be considered valid, it would consist in not only an independent validation of the thesis of one-
dimensionality, or the “administered society” (ODM, 169)\(^8\), to the Critical Theory of the Frankfurt School, but it would also be validated to phenomenology.

Marcuse refers almost exclusively to *Crisis*, section 9h on the lifeworld, to make his argument. He begins by accepting Husserl’s discovery of the lifeworld as the pre-scientific basis for Galilean science that undercuts the supposed independence of scientific truth so that, in Marcuse’s words, “it remained a specific method and technique for the *Lebenswelt.*” (ODM, 162) While mathematical science constructs an idealical reality distinct from the lifeworld, it nevertheless refers back to practical measurement that is the original, pre-scientific content that is preserved in science. As Husserl said, “everyday induction grew into induction according to scientific method, but that changes nothing of the essential meaning of the pregiven world as the horizon of all meaningful induction.” (CES, 50)

Thus, Marcuse goes on to say, this anticipation of the lifeworld as calculable permits the domination of nature. Although Husserl does not use this phrase, it is a valid rendering of his later statement that “theoretical accomplishment in objective science has its ground on the place of the pregiven world, the lifeworld—[in] that it presupposes prescientific knowing and the purposive reshaping of the latter.” (CES, 226, my emphasis) While there is no reference to domination in the sense of practical activity in Husserl’s meaning, since he is concerned with a domination, or subsumption, of experienced reality by a theory, mis-taking due to mis-thinking, Marcuse is correct to take measurement in its practical sense as an altering and purposive reshaping that may indeed be called domination. If Marcuse can make his use of Husserl’s concept of the lifeworld stick, it would justify the extension of theoretical subsumption of lifeworld experience to social domination by means of Galilean science.

Crucially, Marcuse then states that “individual, non-quantifiable qualities stand in the way of an organization of men and things in accordance with the measurable power to be extracted from them.” (ODM, 164) In Husserlian terms, we may say that the lifeworld, understood as the “ultimate substrates” of which we have concrete intuition of individuals as such, is the basis for a critique of “the garb of symbols of the symbolic mathematical theories…we take for *true being* what is actually a *method*” (CES, 51; ODM, 168) and a recovery of concrete individuals through immediate intuition. (CES, 226ff.)

---

Husserl’s critique of the “garb of ideas,” or “ideational veil” (Ideenkleid) by which we mistake the method of a mathematical-empirical science for true being (CES, 51) is the closest point of convergence between his critique of reason and the Marxist concept of reification that Marcuse attempts to develop in a new form. So, thus far, it is possible to say that, with the interpretive addition of the term “domination of nature,” Marcuse has faithfully interpreted the meaning of Husserl’s account of the relationship between science and the lifeworld.

Marcuse continues to say that due to its conceptual formation, Galilean science is “the technic of a specific Lebenswelt, it does not and cannot transcend this Lebenswelt.” (ODM, 164) Here, Marcuse quotes Husserl’s statement that science leaves the lifeworld unchanged to mean that Galilean science cannot envisage a qualitatively new mode of seeing. (ODM, 165; Marcuse refers here to CES, 51) In other words, under the model of Galilean science, reason has lost the transcendence of empirical reality by which philosophy was able to judge present existence and propose alternatives. While Marcuse admits that this may be an over-interpretation, it is nevertheless used to ground his developing argument that science in its Galilean form and a specific lifeworld are mutually reinforcing so as to construct one-dimensional society in synthesis with one-dimensional thought. Galilean science does not transcend, and thus cannot criticize, its specific lifeworld, and this specific lifeworld calls forth and seems to justify Galilean science.

However valid this point may be in itself, this is not just an over-interpretation of Husserl; it is a misinterpretation. Husserl explains on the same page that he means that phenomenological intuition has access to a concrete lifeworld with a characteristic style in which “practically all our whole life takes place” that remains available despite the reification inherent in Galilean science. (CES, 51) In this sense, Marcuse justifiably characterizes it in terms of “individual, non-quantifiable qualities.” (ODM, 164) But we should clarify that the lifeworld underlies science in another sense: the lifeworld is these concrete individuals available in immediate intuition, but it is also the world of practical activity and meaning in which science is one project among others so that human social organization and communication are presupposed by the scientific enterprise. As Husserl says, “if we cease being immersed in our scientific thinking, we become aware that we scientists are, after all, human beings and as such are among the components of the lifeworld which always exists for us, ever pre-given.” (CES, 130) Thus, the lifeworld has at least these two meanings: (1) the immediate intuition of concrete individ-
uals with distinct qualities, and (2) the everyday practical world in which science is one human project among others.

In attempting to use Husserl’s concept of the lifeworld, which he renders as a specific lifeworld—meaning a socially and historically determinate one—Marcuse both asserts a self-confirming relation between a specific lifeworld and Galilean science that is consistent with Husserl’s thinking and misses the sense in which Husserl places Galilean science within a larger conception of human projects and organizations in the lifeworld. That is, he agrees with Husserl that Galilean science confirms, and is confirmed by, a truncated sense of experience is which mathematical quantities are substituted for concrete individuals with distinct qualities. He disagrees with, or rather fails to register, the sense in which Husserl uses the lifeworld to assess Galilean science as one human activity among others—which is surprising since one would expect that Critical Theory could make use of such a critical use of the concept of lifeworld. This distinction between two senses of the lifeworld should encourage asking the broader question of why technical, instrumentalist conceptions of practical action tend to dominate our experience of the lifeworld. Ironically, however, this broader question is asked by Marcuse rather than Husserl.

The rhetoric of a specific lifeworld is used by Marcuse repeatedly without elaboration, though he clearly means some definite social organization of the lifeworld that has a dominating structure mirroring that of Galilean science. It may be thought that this dominating social structure would be “corporate capitalism,” but that cannot be the case because there is no discernible sense in which corporate capitalism might enter into the conceptual structure of science. Moreover, One-Dimensional Man indicts the Communist societies of the East as much as the corporate capitalist ones of the West. In any case, Marcuse’s argument is not directed toward a specific critique of a given social structure but toward the loss of the preconditions for such critique. The specific structure of the lifeworld in question must refer to its technical nature, since it is instrumentality that is at issue, so that Marcuse’s thesis is some version of a technocracy thesis as supplanting different social forms such as corporate capitalism and Communism. So, we may say that the specific structure of the lifeworld in question is one in which technical-instrumental action is predominant, but not much more can be filled in than that.

Nevertheless, there seems to be a mutually conforming circle between science and the lifeworld such that science cannot criticize the lifeworld and the lifeworld cannot criticize science. Moreover, it would appear that the technical structure of the lifeworld justifies
the science and the science justifies a technicized lifeworld. Thus, the “garb of ideas,” *Ideenkleid*, or, in Marxist terminology, “reification” that inserts itself between science and the lifeworld has the consequence that the lifeworld is rendered as the ontology of a scientific method, and the inner conceptual structure of Galilean science enshrines the lifeworld project of “methodical, systematic anticipation and projection.” (ODM, 164) This is the core issue of *One-Dimensional Man*. It describes a self-reinforcing universe from which there is no escape, even while arguing for escape and presenting an analysis that presupposes that its author has already made such an escape. Marcuse concludes that “nature, scientifically comprehended and mastered, reappears in the technical apparatus of production and destruction which sustains and improves the life of the individuals while subordinating them to the masters of the apparatus. Thus the rational hierarchy merges with the social one.” (ODM, 166) The last word of the chapter projects a world of total administration in which reason has become a form of domination even though the whole analysis presupposes some escape from this fate. (ODM, 169)

A reading of chapter six of *One-Dimensional Man* shows not only considerable continuity between Husserl’s and Marcuse’s critiques of the conceptual structure of Galilean science, it also shows significant agreement regarding the inner linkage between a form of technical action in the lifeworld; its *instrumentalist horizon* in the lifeworld that renders other activities and perceptions in technical form; and the mathematization of nature in Galilean science that provokes a crisis for European humanity. There is even a kind of convergence on the key idea for the thesis of one-dimensionality that science in the Galilean style is in a mutually reinforcing relation with an instrumentalist orientation in the lifeworld, which ultimately leads to what Husserl called a “revolution in the technical control of nature” (CES, 271) and Marcuse called the “domination of nature.”

Despite this convergence, we may note three important differences in analysis that are significant for the interpretation of each author as well as for the philosophical analysis of the matters themselves. First, Marcuse’s introduction of the term “domination of nature” serves to make a connection to instrumentalism in the social dimensions of the lifeworld in a wider sense than Husserl’s reference to measurement in scientific practice, but it does not yet show how instrumentalism and scientific method are connected. Nor, one may add, does Husserl. Both authors merely *assume* this connection rather than show its foundation. Second, Marcuse’s misinterpretation of Husserl’s statement that the lifeworld remains unchanged by Galilean science serves to obscure a crucial divergence.
is indeed a sense in which contemporary Galilean reason has lost its transcendence over social reality, as Husserl agrees, Marcuse is wrong to find a source for this thesis in Husserl’s statement. Husserl means that science cannot displace the lifeworld in its status as ontologically prior and pervasive. So that, for example, scientists use lifeworld meanings in their social organization and communications, and the application of scientific technologies affects, and is affected by, lifeworld meaning and value—which would seem to be a meaning useful to the thesis of one-dimensionality.

Third, because of this misinterpretation, Marcuse fails to appreciate that Husserl’s dual conception of the lifeworld both as “original self-evidences” (CES, 127) and as “human formations, essentially related to human actualities and potentialities” (CES, 130) allows for a conception of phenomenological intuition that both underlies Galilean science as a form of evidence and places Galilean science, with its practical technical dimensions, within a larger appreciation of concrete human socio-cultural meaning. So, while Husserl’s phenomenology proposes a philosophical solution to the crisis, Marcuse’s vacillates, as he admits, between two contradictory hypotheses: that the self-confirming circle of one-dimensionality will persist and that an “accident” may provoke a reversal. (ODM, xv) The crucial question of the relation between Galilean science and its instrumentalist horizon in the lifeworld remains unresolved.

3. Marcuse’s Review of Husserl’s Crisis

In a paper that amounts to an extended review of Husserl’s Crisis given to the Boston Colloquium for the Philosophy of Science9 on February 13, 1964, Marcuse pinpoints three aspects of the internal, conceptual relation between Galilean science and the lifeworld in Husserl’s work. His summary of them refers to Hegel to suggest that

---

science is an Aufhebung der Lebenswelt (OSP, 285)—which in Hegelian terminology refers to something that is both negated and preserved in a higher form. It is important to clarify that these three aspects of the relation between lifeworld and science are attributed to Husserl by Marcuse and that “this threefold process takes place in the scientific abstraction.” (OSP, 286) Marcuse’s interpretive step is to discover, or superimpose—whichever word is most adequate here—the Hegelian structure that yields a conceptualization of the unity of the three aspects.\footnote{Aron Gurwitsch, in his comment on Marcuse’s paper, points out that this context of the critique of reason is not the only possible one and questions whether it might not do justice to Husserl’s intentions and the philosophical significance of the Crisis. His comment concludes by summarizing that its contributions to the philosophy of science stem from phenomenology and that its main purpose is as an introduction to phenomenology. In this way, he contributed to the “internalist” reading of Husserl’s text and its inoculation from any form of social critique. Thus, he evades evaluating Marcuse’s interpretation and critique explicitly, even though the last sentence that Husserl’s work should “not be mistaken for an expression of an ‘anti-scientific’ attitude intimates that he sees Marcuse’s position as such. Aron Gurwitsch, “Comment on the Paper by H. Marcuse,” Boston Studies in the Philosophy of Science, Vol. 2. However, in his republication of this comment, Gurwitsch erased any reference to Marcuse. Aron Gurwitsch, “Husserlian Perspectives on Galilean Physics,” in Phenomenology and the Theory of Science (Evanston: Northwestern University Press, 1974). In 1973, after a lecture by Gurwitsch on Husserl’s Crisis, I asked him if Husserl’s critique of reason did not imply some form of social critique, a question which he refused to answer on the ground that it was not his topic in the lecture.}

First, science “cancels the data and truth of immediate experience” (OSP, 285) insofar as the object known is apprehended not “in its contingent, particular occurrence...but as an exemplification of general objectivity.” (OSP, 283–84) Galilean science renders the lifeworld in the form of exemplary data that are subsumed under a pre-given conceptual structure. This is the first form of the Hegelian dialectical negation of the lifeworld by science. It corresponds accurately to Husserl’s reference to the purposive reshaping of the lifeworld understood as the subsumption of qualitative experience of individuals under quantitative Galilean science (CES, 226) that Marcuse framed in One-Dimensional Man as the domination of nature, even though the connection to social measurement as a form of domination is less apparent in this text. This characterization adequately captures the sense in which phenomenology and Critical Theory converge on a critique of instrumental reason as the subsumption of experience under mathematical form. It is also what Horkheimer and Adorno mean in their critique of the “non-
specificity of the example” in the culture industry, where “the whole and the parts are alike; there is no antithesis.”

Second, science “preserves the data and truth of experience” (OSP, 285) since “the empirical reality [which is Marcuse’s rendering of Husserl’s concept of the lifeworld] constitutes, in a specific sense, the very concepts which science believes are pure theoretical concepts.” (OSP, 283) The argument that the structure of the lifeworld enters scientific conceptuality is the core of Marcuse’s reading of Husserl’s work as a critique of the supposed independence of science from the lifeworld. I will discuss this in detail below.

Third, the data and truth of experience are preserved, not in their lifeworld form, but in the higher “ideational form of universal validity.” (OSP, 285) Marcuse says no more here about this higher, Hegelian synthetic form of universal reason, but from the larger context of his reading of Husserl that he mentions at the outset, we can see that he is pointing to the idea of the identity of Reason and Being as a project that both Husserl and Hegel would see as the telos of the critique of instrumental reason. Marcuse distances himself from this teleological identity, suggesting in the final word of his paper that philosophy thus understood contains a hubris due to failing to investigate its own origins, thereby failing to promote humanitas. (OSP, 290) Marcuse’s paper therefore contains the judgment, characteristic of his work, that philosophy has carried the idea of transcendence, and therefore the capacity of judging social reality, that it nevertheless cannot carry through in practice due to its own abstraction from practice.

The Hegelian structure thus consists, first, in the subsumption of lifeworld experience under a Galilean scientific form and a reification whereby Galilean method is taken as reality itself; second, a preservation of measurement in the lifeworld within Galilean science; and, third, a higher form of reason that projects the identity of reason and

11 Horkheimer and Adorno, Dialectic of Enlightenment, 10, 126.
12 Pier Aldo Rovatti is correct that Marcuse “confuses” the Lebenswelt with “empirical reality” and that this is central to his under-appreciation of Husserl. The current parsing out of three means of the term in Husserl is what allows a deeper appreciation of the common locus. Rovatti, “Marcuse and The Crisis of European Sciences,” Telos, 2 (1968): 113–15, here 115.
13 See, for example, Herbert Marcuse, “The Concept of Essence,” in Negations, (tr.) J. J. Shapiro (Boston: Beacon, 1968), 87. Here, Marcuse says that “the characteristics of essence no longer need to be stabilized in timeless eternal forms...[but] will all have to prove themselves in the practice of the associated individuals.” See also Herbert Marcuse, Reason and Revolution: Hegel and the Rise of Social Theory (Boston: Beacon, 1969), 251–57.
being. Marcuse and Husserl agree about the first problem of sub-
sumption and reification. They also agree that measurement is the
lifeworld index of Galilean science, though Marcuse wants to extend
this to social measurement and technique. Specifically, through the
concept of the “domination of nature,” Marcuse aims to unite socio-
technical domination and the domination of nature understood in a
Galilean manner. He claims that, since Galilean science is critical
neither of experience nor of its reification, the instrumental-technical
structure of empirical reality in the lifeworld enters scientific con-
ceptuality. Further, the impact of scientific technologies in the lif-
world extends technical control in the form of social control and
domination. (OSP, 286; ODM, 157–58) It thus becomes a matter for
social critique for Marcuse, whereas, for Husserl, “technization”
(Technisierung) is a matter of the internal structure of Galilean
science due to its loss of connection to concrete intuition of individu-
als so that the formal sign-system can be manipulated without re-
gard to content.\(^\text{14}\) (CES, 46–48) So, while there is the basis for some
sort of convergence here, it would be necessary to show that tech-
nization in Husserl’s formal sense does indeed support technical
control in Marcuse’s sense of social domination. However, there is no
justification in this Husserlian philosophical context of why this
should be so; justification could consist, one supposes, in the whole
evidence of One-Dimensional Man, but the crucial point of how such
social-historical evidence is pertinent to the conceptual structure of
Galilean science is what is at issue in the appropriation of Husserl.
Finally, whereas Husserl sees requisite constitutive subjectivity in
return to the entelechy of reason in European culture established by
philosophy, Marcuse relies on this entelechy but claims that its
humanist essence can only be realized through empirical, sensuous
subjectivity that is engaged in practical activity, which goes beyond
philosophy.\(^\text{15}\)

Summing up, then, a theoretical convergence of Husserlian phe-
nomenology with Marcuse’s thesis of one-dimensionality would

\(^{14}\) John O’Neill points that by “technique,” Husserl means theoretical technique
and Marcuse means social technique. See “Marcuse, Husserl and the Crisis of the
Sciences,” 331, 334. No investigator, as far as I have been able to discover, has
entered into an analysis of this difference to show that there is a phenomenolog-
ical basis for a systematic relationship between the two.

\(^{15}\) To this extent, Rovatti is correct that Marcuse deems Husserl’s a “purely
theoretical analysis.” See “Marcuse and The Crisis of European Sciences,” 113.
However, Rovatti’s contention that this means that Marcuse accepts a traditional
distinction between theory and practice seems to mistake the object of the
criticism for its presupposition.
require, first, an adequate account of the relationship between the theoretical technique of formal sign-systems and the utilization of material techniques in the lifeworld. And, second, it would require clarification of the sense in which concrete intuition and constituent subjectivity can restore meaning and value to Galilean science. Let us begin with the latter.

4. Constituent Subjectivity and the Perception of Non-Quantifiable Individuals

For Husserl, introduction of the lifeworld into the critique of Galilean science is intended to expose reification and thereby return to the immediate experience of the concrete, qualitative, individual object as more than a subsumption under Galilean scientific method. One meaning of the lifeworld refers to the manner in which it is perceived and conceived exclusively through its technical, measurable quantities when subsumed under science in the Galilean style. A second meaning refers to the practical activities that Husserl notes are presupposed by Galilean science as a world of everyday interaction that, as we have seen, Marcuse misses due to his misinterpretation of Husserl’s statement that science leaves the lifeworld as it is. A third refers to the aim of securing access to those “individual, non-quantifiable qualities” that Marcuse shares with Husserl and which is the basis for his positive reception of the *Crisis*. (ODM, 164) The constituent subjectivity that is the final, teleological sense of the lifeworld refers to this third sense of perception and conception of qualities of concrete, individual objects. A lot rests upon keeping these three senses of the lifeworld distinct: technique, everyday interaction, and individual qualities of objects perceived and conceived by an adequate constituent subjectivity. The assumption that such perception of individuals can be discovered as both ground and critique of Galilean science is common to both Husserl and Marcuse.

Recall that, at the third purported Hegelian stage of the relation between science and the lifeworld, Marcuse refers to the identity of Reason and Being as distinctive of philosophy as such, and the critique of this identity is the ultimate aim of the critique of instrumental reason. Whereas Hegel saw such an identity as already achieved in his present world, for Husserl, it is a project yet to be realized, though already given as a task. An adequate constituent subjectivity would then ground such a philosophical teleology. By contrast, Marcuse sees this telos as a hubris inherent in philosophy that devalues its humanitas to an ideology. His two critiques of Husserl, presented after this Hegelian interpretation, attempt to sustain his view
that neither phenomenology, nor philosophy more broadly gain adequate access to constituent subjectivity in a manner adequate to overcoming one-dimensionality.

Husserl claimed that Galilean science *necessarily* lost its meaning for the lifeworld due to the arithmetization of geometry. (CES, 44) Marcuse endorsed this analysis in his own voice without reference to Husserl in claiming that “the algebraization...replaces ‘visible’ geometric figures with purely mental operations.”¹⁶ (ODM, 148) The move to formalization in method tends to become a technique that operates independently of experiential meaning. Husserl therefore contrasts formalization as a technique that operates with symbolic concepts and whose practice of reflection “stops too soon” to reach back toward the “original thinking” to the “concretely intuitive thinking” that phenomenology can provide. (CES, 46) Put directly, without phenomenology, Galilean science breaks with the meaning and value embedded in the lifeworld. Husserl was clear, not only in *Crisis* but in earlier work, that his critique of formal, technical science as a loss of meaning depended upon the re-establishment of this meaning through phenomenological intuition of individuals. As he said in *Formal and Transcendental Logic*, “to have insight into...[evidence of truth] one must *make ultimate cores intuited*, one must draw the fullness of adequation, not from evidence of judgment-senses, but instead from evidence of the ‘matters’ or ‘affairs’ corresponding to them.”¹⁷ Or in *Experience and Judgment*, “original substrates are therefore individuals, individual objects, and every thinkable judgment ultimately refers to individual objects, no matter how mediated in a variety of ways.”¹⁸ Essentially, this means that access to some level, or form, of non-reified experience underlying scientific formalization is both possible and necessary to the critique of Galilean science. Marcuse agrees with this even though his critique of Husserl claims that phenomenology does not reach such an experiential level prior to reification; it does not actually reach “constituent subjectivity.” (OSP, 288–89) However we might adjudicate this disagreement, it is based upon an agreement that access to a constituent subjectivity intuiting concrete individuals is indeed the presup-

¹⁶ John O’Neil incorrectly claims that Marcuse “ignores” the origin of formalization as described by Husserl. See “Marcuse, Husserl and the Crisis of the Sciences,” 331.


position of a critique of formalizing reason. Husserl assumed throughout his work that such access was possible.19

However, it remained an unredeemed assumption in Husserl’s work that formal reason, or arithmetized geometry, can be grounded adequately in the concrete intuition of individuals. If, for example, one were to universalize from a concrete intuition in the lifeworld, say of a cabbage, to a plant, to an object, and finally to “x” or anything-whatever, one would retain a reference backward toward concrete individuals through the stages of abstraction: object, plant, cabbage. But if one begins with the “x,” one cannot return gradually to an individual object since there is no concretion, or exclusion, retained in the “x” with which to begin.20 Therefore, for Husserl, “characterization of modern knowledge as a technique originating in symbol-generating abstraction disallows the restoration of immediate intuition to the scientific edifice.”21 A recent, important book by Burt Hopkins, developing the implications of the work of Jacob Klein, entitled The Origin of the Logic of Symbolic Mathematics has thoroughly documented that this remained merely an unredeemed assumption throughout Husserl’s work.22

I cannot discuss this finding in any greater detail here. It does, however, alter considerably the direction of phenomenological critique of Galilean science. Although the lifeworld can be characterized as concrete intuition of individuals, and one may abstract from such individuals toward higher levels of conceptual universality, one cannot return from conceptual universality of the formal, arithmetized type toward such concrete intuition. In one place in his

19 Taken literally, Marcuse’s thesis of one-dimensionality seems to require that such original relation to concrete individuals is no longer available to us, which poses the difficult question to him of how reification can be shown to be reification if all experience is reified. In the introduction to One-Dimensional Man, he noted that the book vacillated between the thesis that qualitative change could be contained and that forces for change could break through. (ODM, xv) The problem here is that even if the prospects for change are small, a theoretical basis for their possibility must be maintained. The conclusion of this article states succinctly how it is possible to both assert the thesis of one-dimensionality and show how it can be overcome.


work, Husserl recognized that a return to the contents abstracted-from in logical systems does not achieve a return to concrete objects but only to “abstract moments in significations.”\textsuperscript{23} but this recognition did not affect his assumption that a return to concrete individuals in phenomenology would cure the crisis of the sciences. Marcuse shared this assumption.\textsuperscript{24}

Marcuse credits phenomenology, and indeed any transcendental philosophy, with being able to see behind reified appearances, but he argues that Husserl “stops short of the actual constituent subjectivity.”\textsuperscript{25} (OSP, 289) Further, he argues that Husserl’s subjectivity is purely cognitive and does not reach to the active subject in the lifeworld. These two criticisms are not developed further in his presentation on Husserl. However, we can see in them a basis for Marcuse’s later work in which he attempts to recover active, constituent subjectivity as the ground for a critique of one-dimensionality. At the end of \textit{One-Dimensional Man}, he proposes that “technology may provide the historical correction of the premature identification of Reason and Freedom, [but] the correction can never be the result of technical progress \textit{per se}. It requires a political reversal.” (ODM, 234) In this sense, Marcuse’s critiques of Husserl may be seen as

\textsuperscript{23} Husserl, \textit{Formal and Transcendental Logic}, Appendix 1, p. 298.

\textsuperscript{24} One might fruitfully interpret the history of Marcuse’s work as a continuing attempt to fulfil this assumption in various political forms—nature, aesthetics, women, ecology, the Third World, etc.—an assumption that he picked up during his studies with Martin Heidegger in the late 1920s rather than in his later use of Husserl. However, in the present context it, is the assumption that he shared with Husserl that is important, rather than the various forms in which he attempted to redeem it.

\textsuperscript{25} This failure to see any relevant distinction between Husserl and Kant (OSP, 288–89) leads to Marcuse’s later speculation that a new society would develop a qualitatively new science. See Herbert Marcuse, “The Responsibility of Science,” in \textit{The Responsibility of Power}, (ed.) L. Krieger and F. Stern (New York: Doubleday, 1967). Marcuse’s vacillation on this point is clear in \textit{One-Dimensional Man} where he rejects the apparent implication of his argument for a qualitative physics but, on the same page, claims that it would “affect the very structure of science.” (ODM, 152) Given that he has earlier followed Husserl in describing Galilean science through the mathematization of nature (ODM, 146) and the algebraization of geometry (ODM, 148), it is hard to see how both of these statements can be affirmed. Andrew Feenberg has argued convincingly that if Marcuse had maintained the phenomenological conception of the lifeworld as lived nature, instead of abandoning it for a less precise conception of nature based in the early Marx, he would have been able to avoid this vacillation through the distinction between lived nature and scientific nature. See chapter six of Andrew Feenberg, \textit{Heidegger and Marcuse: The Catastrophe and Redemption of History} (New York: Routledge, 2005).
continuous with the phenomenological project of a return to the concrete intuition of constituent subjectivity, with the adjustment that such subjectivity is to be found primarily in action and only secondarily in reason. Although he leaves it as an open question at the end of his presentation whether philosophy itself shares the *hubris* of science, his earlier essay “Philosophy and Critical Theory” had already asserted that “the untruth inherent in all transcendental treatment of the problem thus comes to philosophy ‘from outside;’ hence it can be overcome only outside philosophy.”

So, we may say that Marcuse’s conception of constituent subjectivity aims to overcome not only the one-dimensionality inherent in Galilean science but the untruth of philosophy itself insofar as it abstracts from sensuous, embodied practice in the lifeworld. Only such sensuous, embodied practice would be a sufficient constitutive subjectivity.

There are three phenomena whose inter-relation is the philosophical core of what is at issue between Marcuse and Husserl: the conceptual structure of Galilean science; measurability, or what we might call technical, means-end action in the lifeworld; and an instrumentalist horizon in the lifeworld where what can be measured becomes dominant. The thesis of one-dimensionality claims that these are inter-related in such a manner that the transcendent, critical power of reason is lost and the instrumentalist horizon of the lifeworld reduces practical action to technique. Galilean science and technique thus constitute a self-reinforcing world. Through this thesis, Marcuse would explain why the crisis of the sciences becomes a crisis of humanity through reference to the contemporary lifeworld rather than an entelechy of reason inherent in Europe as Husserl claimed.

The short considerations in this section aim to show that the common assumption in Marcuse and Husserl that the critique of Galilean reason can appeal to an underlying level of qualitative experience of individuals remained an unredeemed assumption. We will thus proceed to attempt a resolution of the issue without relying on such an assumption. The first step in such an account is an adequate description of the relationship between the theoretical technique of formal sign-systems and the utilization of material techniques in the lifeworld so that Marcuse’s and Husserl’s different senses of the term “technique” can be reconciled.

---

26 Herbert Marcuse, “Philosophy and Critical Theory,” in *Negations*, 150.
5. Phenomenology of Technique and the Instrumentalist Horizon

We have seen that a theoretical convergence of phenomenology and Marcuse's thesis of one-dimensionality would require a description of the relationship between the theoretical technique of formal sign-systems (arithmetized geometry) and the utilization of material techniques such that the formal sign-system finds its lifeworld connection in technique, or technical action, rather than concrete intuition of individuals. Consequently, although abstraction from such techniques can indeed yield formal-mathematical knowledge in the Galilean style, there can be no return from such science to the lifeworld that could resolve the crisis in the manner assumed by both Husserl and Marcuse. Resolving this issue will allow us to resolve the related issues of constituent subjectivity and the instrumentalist horizon in the lifeworld where what can be measured becomes dominant. In turn, this description will ground a constituent subjectivity that can ground the emergent socio-ecological dimension of the critique of Galilean reason.

It must first be emphasized that it is formalization, and not mere generalization, that institutes a problematic relation between science and lifeworld characterized by “forgetting of origins” and their putative phenomenological recovery. In generalization, we move from a concretely intuited individual toward higher levels of abstraction in a species-genus hierarchy. For example, one can abstract successively from a specific ant to the generalization of any ant whatever, to insects, to living beings, to beings of any kind, etc. One can easily move up or down the hierarchy by generalizing to give a higher and more inclusive form and specifying to give a more specific type. In such a generalizing abstraction, no issue of the severing of scientific form from lifeworld experience arises because at every level of abstraction there are material characteristics that can be either filled in with specific types or generalized toward more en-

27 The distinction between generalization and formalization was central to Husserl’s phenomenology of reason throughout his work. See CES, 45; Edmund Husserl, Logical Investigations, (tr.) J. N. Findlay (London: Routledge and Kegan Paul), 482–84; Ideas Pertaining to a Pure Phenomenology and to a phenomenological Philosophy. First Book: General Introduction to Pure Phenomenology, (tr.) F. Kersten (The Hague: Martinus Nijhoff, 1982), 26–27; Formal and Transcendental Logic, 76–78. See also Ian Angus, Technique and Enlightenment: Limits of Instrumental Reason (Washington: Centre for Advanced Research in Phenomenology and University Press of America, 1984), 21–25.
compassing possibilities. In contrast, formalization is not a step-by-step abstraction but an all-in-one-blow abstraction to the mere form of any object whatever, an “empty x.” Whether I begin from a chicken, an ant, a mountain, a sentence, a novel, or a dream, formalizing replaces all material characteristics in one blow with the mere idea of any sort of thing that might have any sort of characteristics. As we have noted above, it is for this reason, that the “x” be “filled-in” by specifying a lower level since there are no material characteristics that would constrain in any way such a specification. Similarly, one cannot move further up the hierarchy toward an even more empty x. Formalization involves the one-step bare contrast between a given object and “the pure form of any object whatever.” This is why the relationship of formal sciences to the lifeworld presents a difficult issue that has become a cultural crisis.

It is significant that the Frankfurt School of Critical Theory does not, in general, make a clear distinction between these two concepts of abstraction. The main referent is mathematics, which is understood as number and measurement, so that the issue of crisis as Husserl diagnosed it is misunderstood. For Husserl, measurement is simply the lifeworld index of formalization and the problem of form is “emptying-out” and not quantification. This misunderstanding is operative in Dialectic of Enlightenment, where Horkheimer and Adorno call mathematics “the most abstract form of the immediate [that] holds thinking firmly to the immediate.”28 If this were so, the crisis as Husserl understands it would never appear because concrete immediacy would be evidently present within the formal sciences. In Eclipse of Reason, Max Horkheimer—who, like Marcuse, attended Husserl’s lectures29—noted that while there is a distinction between subjective, instrumental reason and formalization, nevertheless he would treat them as “practically equivalent.”30 Similarly, Marcuse—despite a passing reference to the “algebraization of geometry” (ODM, 148)—asserted that “measurement in practice discovers the possibility of using certain basic forms...‘available as identically the same’...[such that] through all abstraction and generalization, scientific method retains (and masks) its pre-scientific-technical structure.” (ODM, 163) But any abstraction, including generalization, to a concept makes the concept available as identical

---

28 Horkheimer and Adorno, Dialectic of Enlightenment, 27.
in all cases to which it applies; it is not specifically characteristic of the formal abstraction that characterizes modern mathematics. This crucial confusion of two distinct forms of abstraction erroneously makes it seem as if it is quantification or scientific conceptuality itself that causes the crisis, whereas Husserl specifically targets the hegemony of formal reason. Thus, only a phenomenological analysis can adequately show the connection between formal reason and technique in the lifeworld. The critique of reason in the Critical Theory of Society is lacking in comparison to that of phenomenology for this reason.\(^{31}\)

Our account of the relation between Galilean science and lifeworld technique will thus begin by rigorous adherence to the conceptual distinction of generalization from formalization. To put the matter succinctly: how does theoretical formalization connect to lifeworld instrumentalism? Or, how does scientific emptying-out connect to means/end action?

A given object in the lifeworld is not encountered in the first place as an “individual object” as both Husserl, in the context of his crisis-work, and Marcuse assumed. When I pick up a pen to write, I pick up an available pen; when I cut wood, I do so with an axe. My practical action requires an apposite instrument, and it is essential for any organized, established practical activity that it not depend on a sole, specific instrument but merely on one of a given type. A type is formed from treating an individual object as “one-of...”, that is to say,

---

31 Andrew Feenberg’s defence of Marcuse’s approach misses this crucial point in Marcuse’s appropriation of Husserl’s *Crisis*, situating the key issue as quantification that leads to instrumentalism. Feenberg writes:

This new concept of reason is the a priori of science, the precondition of its mode of experiencing and understanding the world.... What is the nature of this new a priori? It has two essential features, quantification and instrumentalization. Science does not address experience in its immediacy but transforms everything it encounters into quantities.... But values do exist and must have a place in the universe. Hence correlated with the quantified reality of science there is an inner world in which everything associated with value takes refuge. This inner world of subjective feelings is excluded from the objective world science explains. That outer world, now stripped of any valuative features and disaggregated, is exposed to unrestrained instrumental control.

Andrew Feenberg, “Marcuse’s Phenomenology: Reading Chapter 6 of *One-Dimensional Man,*” *Constellations*, vol. 20, no. 4 (2013): 604–614, here 605. My argument shows how any definition of modern science that does not include formalism cannot adequately describe the connection between science and technique in the lifeworld.
under a single given aspect. This predominant aspect is under the sway of a practical interest that defines a typical purpose. Any such purpose is an end, or goal, and the action that is oriented toward its fulfillment, I will call means-end, or technical, action.\(^{32}\)

The formulation of such a technique requires its abstraction from the surrounding world of practical action such that it can be focused upon as a singular goal; from this goal, relevant means can be defined and organized to allow us to attain it. When I look at a piece of wood under the aspect of burning, some wood looks better than another. But if I were to look at it under the aspect of making a plank for building, that would also sort out the available pieces and the ways they should be modified to render them serviceable planks. In each case, the wood is sorted differently according to the purpose, goal, end that defines the type. Note, however, that if I were to focus on the wood as a concrete, qualitative individual, it would require another constituent subjectivity that would unify these typical, partial determinations of the wood and would thus be beyond any technique or use. I argue that it is in this sense that both Marcuse and Husserl are right to speak of a “second reduction” within lifeworld experience that is necessary for concrete individuals to appear as such. (OSP, 289; CES, 137–41)

Formalizing abstraction may begin from an element of the lifeworld, such as an axe or pen, in order to designate it as an “x.” The connection between Galilean science and technique thus resides at the point at which a type is thematized either in relation to its surrounding practical world or as an aspect of a theoretical domain of similarly formalized objects. The emptying-out that treats a type as a formal x removes the technical end from any relationship to other ends as experienced in the lifeworld and theorizes it strictly formally, that is to say, without any consideration if such an end is valid, good, or just. To be sure, technical end is never itself formal since it contains a concrete purpose, such as wood for burning or a pen for writing, that defines adequate means toward that end—means that can then be refined to become the most efficient possible. The efforts of technological society are oriented to this task of taking available

---

means and constructing the most efficient means so that practical and theoretical energy is directed away from the ends themselves and the inevitable plurality of ends that exists in any lifeworld. However, since the end is emptied-out when theorized formally, burning and writing lose their connection to the whole domain of practical action. In this way, formal science reinforces technical action as an isolated action by removing the material, content-ridden thought that would necessarily place it in the context of other purposes and goals.

Emptying-out thus serves technique by removing it from ethical-political deliberation. Quantification and measurement would not by themselves produce such a consequence. Nor would theoretical generalization, which remains tied to a specific species-genus abstraction that is sufficiently concrete to evaluate the purpose of that abstraction in relationship to similar material universals. It is the formalization in the abstraction that removes the end from material judgment since the end becomes “any end, or thing, whatever” that can be theoretically designated by an “x.” Formalization in theory becomes one-dimensionality in practice.

So, if this is how formal science tends to reinforce technique, how does technique come to “enter scientific conceptuality” in something like Marcuse’s sense? Measurement and the domination of nature refer to practical mastery of the environment through a plurality of techniques shaped into the unity of a lifeworld. Formal science does not contain a direct reference to such material techniques. This is where Marcuse’s thinking went astray and began to toy with the idea of a science with a different conceptual structure. However, formal science removes the possibility of criticizing such techniques within a wider framework pertinent to the unity of the lifeworld because its formalizing abstraction treats any end in the lifeworld abstractly as an end of any type—that is to say, singly and without reference to its organized practical context. By fixing on one isolated end, available means toward that end can be unambiguously defined and sorted for the “one best way” on grounds of efficiency or cost. The isolation of the end, which is necessary for the construction of means, is established by a formalization that excludes the consideration of a surrounding plurality of ends and the practical domain from which an end is abstracted.

In this way, there is a mutual reinforcement between formal science and technique that, following Marcuse, we may call one-dimensionality. But it is brought forth neither by measurement nor by practical domination of nature alone; it is brought forth by the formalizing that abstracts from content and thereby isolates whatev-
er end has been stipulated in defining technique. What is therefore needed is not a science with a new conceptual structure but a mode of thinking and acting that relates to the lifeworld as \textit{more than a simple aggregate of techniques}. The lifeworld understood as a simple aggregate of isolated ends is another way of designating what Marcuse called the \textit{instrumentalist horizon} that ties scientific advance to “a given universe of discourse and action” (ODM, 157), but it is also a way that shows how that horizon can be shown to be limited. Thus, the above linking of formal science to technical action can explain the concept of the “instrumentalist horizon,” which was used but remained unaccounted for in Marcuse’s analysis.

I have suggested that the formalized “x,” as it appears in the lifeworld, should be understood as a \textit{technique} in the sense of a means-structure oriented toward an abstracted, single end, isolated from practical involvements in the lifeworld. Practical involvement within the lifeworld admits of the abstraction of a plurality of ends. Since techniques depend upon the prior process of abstraction of ends, we may say that practical activity operates within an unthematized field prior to abstraction from which stand forth an indefinite number of technical ends that have been abstracted. Each technical end, by virtue of the clarity attained by its abstraction, is a focus within the lifeworld that organizes human action, instruments, and the environment toward the performance of the end. The mere plurality of ends explains the instrumentalist horizon.

We can sketch only very quickly the further direction that this analysis can take. On the basis of this description of \textit{technique}, we may understand a \textit{technology} as a complex of techniques. Say, a carburetor is a technique, as is an automobile, whereas the automobile transportation \textit{system} including highways, oil fractionation, etc.—indeed, everything necessary for the techniques to be assembled in a manner that \textit{functions} in a social-environmental context—is a technology. Technologies attain an established structure within the lifeworld, though they may be influenced and mutated over time, in part by substituting new techniques. The totality of such technologies thus may be understood as defining the character of a specific lifeworld. Focusing on a plurality of technologies is thus an entry into socio-ecological critique founded on the given lifeworld as a whole. Thematizing transversally a plurality of technologies raises the issue of what elements of the organized system of means might be used for other technologies toward other ends. This suggestion is meant in this context only as a mere intimation of how the transversal issue
implied by the analysis of technique may be followed up into a socio-ecological phenomenological Critical Theory.\footnote{Late in his life Marcuse made initial attempts to include an ecological dimension into Critical Theory. This was done on the basis of a Freudian theory of aggressiveness. Without doubting the validity of this approach, it is significant that he did not see a development from the theory of technology in \textit{One-Dimensional Man} as a possibility. The current account provides the ground for such a development. See Herbert Marcuse, “Ecology and the Critique of Modern Society,” \textit{Capitalism, Nature, Socialism}, vol. 3, no. 11 (1992): 29–38. See also Herbert Marcuse, “Ecology and Revolution,” \textit{Liberation}, no. 16 (Sept. 1972): 10–12.}

Let us consider the transversal field of unthematized relations that constitute the lifeworld in the third sense, since it is here that we discover the concrete individuals referred to by Marcuse and Husserl in a form other than the underlying stratum assumed in their critiques of Galilean science. The lifeworld in the third sense of individual qualities of objects perceived and conceived by an adequate constituent subjectivity appears transversally in the relation between the types used in practical action and the horizon of the lifeworld. Husserl explained horizon-intentionality as the implication of an act-validity in other acts due to “the horizon-consciousness surrounding every act.... [Such] horizon-intentionality contains very diverse modes of an intentionality which is ‘unconscious’ in the usual narrower sense of the word but which can be shown to be vitally involved and cofunctioning in different ways.” (CES, 237) In this sense, the distinction of three senses of the lifeworld is what makes possible this appropriation of the Marcuse-Husserl debate for a new socio-ecological critique of reason. The crisis is not that Galilean science has lost contact with the lifeworld, it is that Galilean science connects with the lifeworld only as the theorization through which isolated techniques can be developed. Marcuse is right that the scientific form and practical domination are mutually reinforcing. But Marcuse shares with Husserl the assumption that concrete individuals are to be found as a rock-bottom stratum in lifeworld experience to which an adequate constituent subjectivity could gain access. Our suggestion—that a transversal conception of practical action that situates it within the horizon of a given lifeworld would be an implicit extension of the crisis of the sciences through social critique into ecological critique—is indebted to Marcuse’s work. It is not being suggested that ecological thought and horizontal consciousness are equivalent but that ecological thought is a practical step toward phenomenological consciousness of every act as within a horizon that would capture the truly concrete individual sought by
both Husserl and Marcuse. Rather, it is the transversal thematization of a type or a technique in relation to its horizon whereby the object becomes a qualitative individual (no longer merely a type or technique), and it is consciousness of this qualitative individual that is the constituent subjectivity sought.

Such an ecological critique depends upon the perception of individuals as individuals that is located in the transversal connection of type and technique, through a plurality of techniques and technologies, to the form of a given lifeworld and its horizon. The concrete individual is only accessible as a relation between individual and horizon. How, then, might an adequate constituent subjectivity become available to the phenomenological philosopher or to the social actor? While the plurality of technologies in a specific lifeworld is an entry into socio-ecological critique, it is the lifeworld as unthematized horizon (*Umwelt*)—the horizon of the totality of technological thematizations—toward which such critique is oriented. Constituent subjectivity is consciousness of the horizon of the specific lifeworld. Such subjectivity is available through a transversal consciousness that connects isolated ends into the definition of a social form. In short, constituent subjectivity appears insofar as technical consciousness of isolated ends is supplanted by ecological consciousness of the totality of ends and their horizon. The practical motivations for such a consciousness must be left for another occasion.

6. Conclusion: Qualitative Individual, Ecology, Horizonal Consciousness

The previous argument has claimed that there is a significant embedded tendency to one-dimensional humanity in the prevailing, mutually-reinforcing character of formal-mathematical science and technical ends in the lifeworld. For this reason, despite Marcuse’s mis-interpretation that squeezes Husserl into a Hegelian form, the thesis of one-dimensionality is a valid addition to the crisis of reason in phenomenology. However, this addition can only be developed through the rigorous distinction between generalization and formalization made by Husserl but unappreciated in Critical Theory. In this way, the crucial connection between formal science and technical action can be described. This connection grounds the concept of the instrumentalist horizon and manifests the transversal location where an adequate constituent subjectivity may be found. Thus, there is also an emergent tendency within one-dimensionality due to the transversal plurality of technical ends and their combination into
technologies that define a specific lifeworld. This tendency grounds an incipient ecological consciousness whose motivation can be expected to increase with the proliferation of techniques.

I have suggested that one-dimensionality is precisely the failure to thematize transversal relations, a failure that Marcuse called the instrumentalist horizon. However, instrumentalism is not itself a horizon as the term suggests; it is the failure of horizontal consciousness. Such horizontal consciousness is the third meaning of the life-world that Husserl introduced into philosophy. It remains an important issue, of course, how, when, and why such a consciousness may appear within the one-dimensional world. I will not attempt to address that question here. For the present, it is enough to frame the issue of the emergence of such horizontal consciousness in terms other than the search for an underlying concretion. Only out of such a horizontal consciousness can the concrete individual emerge as the focus of a plurality of transversal relations within an ecological whole. The shining-forth of the individual as individual is dependent on the light reflected from the horizon.

iangus@sfu.ca