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Disenchantment and Modernity: The Mirror of Technique

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Max Weber appropriated the phrase "disenchantment of the world" to describe the modern condition from Friedrich Schiller. In his *On the Aesthetic Education of Man,* Schiller contrasted the unity of Greek life with specialization in the modern age.

> However high Reason might soar [in Greek speculation] it always drew its subject matter lovingly after it, and however fine and sharp the divisions it made, it never mutilated. It certainly split up human nature, and scattered its magnified elements abroad among the glorious assembly of the gods, but not by tearing it in pieces, rather by combining it in varying ways; for the whole of humanity was never lacking in any single god. How completely different it is with us moderns! With us too the image of the race is scattered on an amplified scale among individuals—but in a fragmentary way, not in different combinations, so that you have to go the rounds from individual to individual in order to gather the totality of the race. (Schiller 1977, p. 38)

Schiller's eloquent description of modern fragmentation was one of the first accounts of the alienation which accompanies the specialization of knowledge and experience. In his view, mankind was not yet ready for political freedom (which was demonstrated by the tyranny that emerged from the French Revolution). Schiller's solution was in aesthetics, where a thing "can relate to the totality of our various powers, without being a specific object for any single one of them." (Schiller 1977, p. 99 N.1)[1] Aesthetic appreciation was the school of freedom, the preparation for an enlightened practical life.

Weber's appropriation of Schiller's phrase eliminated the prescription for aesthetics, or, indeed, for any other unifying power. He regarded the modern disenchanted world as a fate, an escapable destiny. Though he referred to the modern rationalized world as an "iron cage," he nevertheless reckoned it rational and

[1]From this perspective one can appreciate the significance of aesthetics for such diverse contemporary critics as Martin Heidegger, Hannah Arendt, George Lukacs, Herbert Marcuse and Theodor Adorno.

logically superior to any attempts at substantive rationality, the connection of "rationality" to concrete needs or goals. Consequently, Weber's description of the rationalized world and the historical process of rationalization has become a crucial reference point in diagnoses of the modern condition. It exemplifies the dilemma of humanity becoming lost in its objectified products that Schiller, in our own time Husserl and Horkheimer, and all critics of modern alienation wish to overcome.

Through the concept of rationalization Max Weber attempted to comprehend the distinctiveness of Western society as it has become manifest in the interrelated but distinct spheres of the modern world. It is the leading concept in a philosophy of history which takes as its problem, in his own words:

> to what combination of circumstances the fact should be attributed that in Western civilization, and in Western civilization only, cultural phenomena have appeared which (as we like to think) lie in a line of development having *universal* significance and value. (Weber 1958, p. 13; *See* Loewith 1970)

Weber distinguishes four main spheres whose separate rationalizations have culminated in modern Western society. These can only be adequately understood as the coincidence and reciprocal influence of distinctive processes of rationalization in religion, science, economy, and state. There are extensive studies in Weber's sociological corpus which provide the empirical material with which to interpret and apply the concept of rationalization. Religious rationalization consists primarily in the expulsion of magic and superstition from the world which began with the Hebrew prophets and culminated in the Puritan rejection of rituals and a sensual embodiment of God (Weber 1958, pp. 105, 117; Weber 1968, p. 479). The rationalization of science began with the Greeks and ends in the modern conception where it can give no answer to the question, "What shall we do and how shall we live?" (Weber 1976, p. 143). Rationalization of the economy is most complete under capitalism in which the quantitative reckoning of the factors of production is essential to profit-making (Weber 1976, p. 331; Weber 1958; pp. 22–24). Fundamental to a capitalist economy is formally free labor, that is, labor which is free to sell its power but separated from the means of production so that it is actually forced to sell by the "whip of hunger" (Weber 1961, p. 209). The fourth of the spheres of progressive rationalization is the state, which reaches its most rational form in legal domination and bureaucracy. Bureaucracy embodies the general structures of rationalism insofar as "rules, means, ends, and matter-of-factness dominate its bearing." Legal rationality is essentially secular, separates the functions of judge/advocate and judgement/enforcement, and is based on the codification and professionalized administration of justice (Bendix 1962, pp. 391–416).[2]

[2]It is interesting to note that Plato regarded the *connection* of judge and advocate in dialectic as necessary to the mixture of reason and passion in enacted justice. *Republic*, 348b.

The rationalizations of these important spheres of Western society have not proceeded totally independently, however. While denying that any one can be regarded as determinative, Weber's empirical work also takes note of the interconnections of these processes. Thus he cites the modern state, rational law, science and technique, and rational ethics (based on Western religion) as factors in the development of capitalism and the rational organization of labor. Elsewhere, he refers to the bureaucratic organization of the state which the capitalist market economy "demands" and the "parallel" development of the modern state and the capitalist enterprise which gradually expropriated the independent producers (Weber 1961, pp. 232–233; Weber 1976, p. 215). Thus, the concept of rationalization underlies Weber's voluminous empirical studies. It is the key to rational development within the separate spheres of modern society and to reciprocal influence between those spheres. The present study analyzes Weber's concept of rationalization through a dissection of his three distinctions concerning rational action. This is the central point for an evaluation of his description of the modern condition.

> The fate of our times is characterized by rationalization and intellectualization and above all, by the 'disenchantment of the world'. Precisely the ultimate and most sublime values have retreated from public life either into the transcendental realm of mystic life or into the brotherliness of direct and personal human relations. (Weber 1976, p. 155)[3]

There have been important attempts by more recent thinkers to address this fate by reconnecting the rationalization of thought and action to ethico-political concerns. For example, Leo Strauss has traced the development and crisis of modern natural right; he criticizes as a symptom of this crisis Weber's distinction between fact and value, his "noble nihilism" in which science cannot furnish values for practical life and rationality can give no self-defense before chaos (Strauss 1953, pp. 47–48). In the value-free conception of science, knowledge is considered as a tool, a neutral instrument which serves ends decided upon outside knowledge.

In its late phase, Edmund Husserl's phenomenological philosophy focused on the separation of specialized scientific spheres and the new "radical investigations of sense" which are required to restore self-responsible practical life (Husserl 1969, p. 5). Also, social phenomenology has regarded standardization and anonymity in the practical world as the experiential ground for the impersonal, objective scientific attitude (Schutz 1971c, p. 71; Nathanson 1975). The connection of scientific thought and practical life that is compressed in the term

[3]There are no full-length studies of Weber's concept of rationalization. Secondary sources simply repeat Weber's distinctions in a less explicit manner rather than attempting the conceptual analysis pursued in this study. The best two articles are Loewith 1970 and Mommsen 1970. However, even these are restricted to explications of Weber's views.

"rational action" indicates that phenomenology re-investigates the territory circumscribed by Weber.

George Lukacs (1971) attempted to synthesize Weber's theory of rationalization with Marx's analysis of commodity fetishism. He combined a diagnosis of reified social action with a critique of the "antinomies of bourgeois thought." In a later development, Max Horkheimer (1974) rejected the Marxist notion that there are internal contradictions to the capitalist order and, in *Eclipse of Reason*, noted that his conception of subjective reason "resembles to a certain degree" Max Weber's formulation (6, N.1).

In these, and in other investigations of the contemporary problem of modernity, Weber's thought remains a significant reference point. Discussion of Weber has focused primarily on the sociological accuracy claimed for his description of the processes of rationalization of action or, in contrast, on criticism or defense of his value-free conception of science. Both of these rest upon the notion of rational social action—which is a compressed statement of the intersection of "rational" scientific standards with practical deliberations based on the prerequisites of action. However, there has been no explicit critique of Weber's account of rational social action. Indeed, a rejection of Weber's conception of science may be coupled with uncritical acceptance of his theory of social action (e.g., Lukacs (1971, pp. 95–100) and Schutz (1971a, pp. 27–28)).[4] The present study seeks to redress this imbalance, and to deepen the diagnosis of alienation, through a detailed consideration and critique of Weber's conception of rational action. It is argued that the theory of rationalization ignores the practical context within which techniques are applied and, consequently, the survival of conventions. However, these conventions are not a sufficient basis to revive a concept of tradition—in this sense the modern world remains disenchanted. This rethinking of rationalization demonstrates the manner in which a contemporary critique of alienation becomes a philosophy of technology which centers on the present untheorized priorizing of the practical world by technique and the recovery of enlightenment by replacing technique within its practical context.

I. TECHNICAL ACTION

There are two analytical distinctions which are central to Max Weber's characterization of rational action—instrumental versus value rationality and technical versus economic action. Through the following analysis of these distinctions, it is argued that technical action is the fundamental type from which others are defined. In fact, rational action is conceived on a technical model.

Weber distinguishes four ideal types of social action. Traditional, habitual action and affectual, emotional action are left aside insofar as they are not consid-

[4]For a criticism of Schutz's conception of rational action as an insufficient basis for phenomenological enlightenment, see Angus 1979.

ered to be rational and are on the "borderline" of what may be considered "meaningful" action since they approximate automatic, uncontrolled reactions. They are limiting types which, insofar as they become conscious, shade into the rational types (Weber 1964, p. 116).[5] The rational types of social action are referred to as instrumentally and value rational.[6] Value rationality is a self-conscious orientation to an absolute value for its own sake independently of consequences, which includes a consistently planned course of action toward the absolute value (Weber 1964, p. 116). Instrumental rationality involves conscious orientation to a system of discrete individual ends in which consideration of alternative means to an end (also present in value rationality), the relation of the end to other results of a given means, and the relative importance of ends are all relevant (Weber 1964, p. 117). This involves making use of expectations of the behavior of objects or individuals for the realization of the actor's goals. Any such prospective instrumentally rational course of action could, for example, involve results which would compromise other ends held by the actor and result in the evaluation of the importance of these conflicting ends in the process of selecting a course of action. Similarly, ends which are seen to conflict might result in the choice of a course of action which maximizes the results of one while minimizing the harm to another. Also, the calculation of means might motivate changing ends.

Clearly then, in the case of value rationality there can be only one value; it is thereby termed "absolute." If there were two or more values, decision on a

[5]This is the methodological introduction to *Economy and Society*. Alfred Schutz criticizes Weber for identifying "meaningful" action with "rational" action. He points out that all human action is meaningful and that this cannot be a criterion for distinguishing between types of action. As a consequence, Weber's typology of social action overlaps his distinction of social from natural events, which also turns on the attribution of "meaning" to social events (Weber 1964, p. 93). Thus, as Schutz argues, all social action is assimilated to the model of "rational" action by Weber and considered insofar as it deviates from this norm (Schutz 1967, pp. 15–20). The present argument is closely related to Schutz's critique. However, it centers on the concept of "rational" action from which Weber categorizes all social action and argues that the concept of rational action is based exclusively on a technical model. In this sense, it pushes Schutz's critique of Weber one step further. In fact, it appears that Schutz accepted Weber's characterization of rational action in general and objected solely to its formulation in terms of the attribute of "meaningfulness" (Schutz 1971a, pp. 27–28, and footnote 42). From this perspective, it seems that Schutz's compromise with Weberian sociology has prevented him from pushing through to the radical critique of technique that is demanded by Husserl's late work (Angus 1979). A further point should be made with respect to Weber's attribution of "consciousness" to rational action types. Action orientation can become "rationalized," in Weber's sense, without the content or substance of action orientation altering in the least. In fact, it is generally thus "rationalized," at least in part, since the irrational types are limiting cases. It invites comparison with Freud's theory of rationalization in which a rational form is superimposed on a previously existent and unaltered content. The incorporation of both Weber and Freud into the theoretical perspective of Critical Theory could be fruitfully elucidated from this point of view.

[6]Parsons, in Weber 1964, leaves *Zweckrational* and *Wertrational* untranslated by any specific terms. The usage in Weber 1968 (e.g., p. 24) which renders the former as "instrumentally rational" and the latter as "value rational" is more appropriate to an explicit discussion of the distinction.

course of action would have to weigh the loss to one against the benefit to another—decide between the two. Even if these values are in a particular case compatible, such considerations fall within the realm of instrumental rationality—a plurality of ends. However, considerations of efficient means to the realization of the absolute value are obviously as relevant to value rationality as they are to the discrete ends of instrument rationality. On the other hand, considerations of the result of an action except its contribution to the absolute value are irrelevant. Such considerations could only be on the basis of effects on another value which would raise the question of the relation of the two and draw in instrumental concerns. Weber's examples of value rationality are of courses of action perceived by the actor to transcend everyday concerns, to justify treating subsidiary effects or mundane ends as irrelevant such as in a religious call, personal loyalty, duty, honor, or the pursuit of beauty (Weber 1964, p. 116).

A complication arises when one asks on what basis one might choose between the discrete plurality of ends involved in instrumentally rational action. Weber notes two possibilities: "Choice between alternative and conflicting ends and results may well be determined by considerations of absolute value." Alternatively, the actor may "simply take them as given subjective wants and arrange them in a scale of consciously assessed relative urgency" (Weber 1964, p. 117). In the first case, action is instrumentally rational only in regard to the choice of means. In the second, arrangement of the given ends is on the basis of self-interest, i.e., what the actor wants apart from considerations of *why* he wants them or an ultimate basis for evaluating them. Thus, value rationality may have varying relations to instrumental rationality. Weber notes that:

> From the latter point of view [instrumental rationality], however, absolute values are always irrational. Indeed, the more the value to which action is elevated to the status of an absolute value, the more 'irrational' in this sense the corresponding action is. (Weber 1964, p. 117)

In other words, the greater the degree to which conflicting ends in instrumentally rational action are resolved by reference to an absolute value, the less rational they are from the point of view of instrumental rationality. The other alternative, in which discrete ends are not elevated but accepted as given and related solely with reference to the actor's self-interest is the most rational from the instrumental point of view since there is no reference to an absolute value and, therefore, all consequences of the actor's actions are considered to be relevant.

Thus, closer analysis has complicated the two initial alternatives of orientation to an absolute value independently of consequences and instrumentally rational action. The latter breaks into two types: In the first case the discrete ends of instrumental rationality are decided with reference to an absolute value; this alternative approximates value rationality since, once decisions between instrumental ends are made, the consequences of the appeal to an absolute value are outside consideration. In the second case, an unwillingness to put the consequences of an appeal to an ultimate value beyond question motivates an accept-

ance of the discrete ends of instrumental rationality as given, to be decided by the actor's self-interest. Nevertheless, despite this complication, the two initial types survive: value rationality, to which a subordinate instrumental element can be appended, and instrumental rationality, which in excluding an appeal to an absolute value holds fast to the relevance of the consequences of chosen ends—an absolute value without reference to consequences and self-interest choosing between given ends.

Weber's second analytical distinction is between technical and economic action. He defined economic action as "prudent choice between alternative ends. This choice is, however, oriented to the scarcity of the means which are available or could be procured for these various ends" (Weber 1964, p. 160; cf. Weber 1968, p. 339). "Economic" considerations are not confined to economic concerns in the more usual sense of the production and distribution of material goods in society. However, this narrow sense of "economic" concerns would be an excellent exemplar of "economic" considerations when applied to the sphere of material production.

Weber distinguished technique from economy as two types of action which are rational in their choice of means. (Both instrumental and value rationality are rational in this sense; their distinction bears on further considerations discussed earlier.[7]) "The term 'technical' [or 'technique'] applied to an action refers to the totality of means employed as opposed to the meaning or end to which the action is, in the last analysis, oriented" (Weber 1964, p. 160).[8] An act of a technical order is significant only as a means; it occurs when there is doubt over the most efficient means of realizing an end; its principle is the optimum result for the least action. In technical considerations the end which is to be achieved is not questioned. The end is taken as given and the best means, considering the quality, certainty, and permanence of the result, is sought. Means are significant insofar as they contribute to this end, and no further. Once one takes into account the relative scarcity of means in relation to their various possible uses, not only technical but also economic considerations have entered. Economic concerns involve the comparison of ends, whereas in a technical problem the end is given. "Eco-

[7]"self-conscious formulation of the ultimate values governing the action and the consistently planned orientation of its detailed course to these values" (Weber 1964, p. 116). Talcott Parsons confirms the similarity of these two types of rationality in their choice of means. Editor's footnote no. 38 to p. 115 of Weber 1964; cf. Parsons 1961, p. 644.

[8]As the translator, Talcott Parsons, points out (Weber 1964, p. 160, footnote 4) Weber utilizes no distinction between technique and technology. Both are covered by the German term *Technik*. The present usage, which has been incorporated into the translations, prefers the terms "technical action" and "technique," between which no distinction is intended, as English equivalents to Weber's term. This is because "technique" signifies an abstract, isolated action pursuing a single defined end. As will be argued subsequently, technical actions always occur within an unformulated practical context. Thus, a separate term, "technology," is required to comprehend the elements of the practical context implicated in any particular application of co-ordinated techniques. This distinction is required for a concrete socio-historical analysis of technique/technology, but is not necessary in the present context which focuses only on the element of technique in the socio-historical world.

nomic action is primarily oriented to the problem of choosing the end to which a thing shall be applied; technique, to the problem, given the end, of choosing the appropriate means'' (Weber 1964, p. 162). Therefore, considerations of the usefulness of the end are outside technical considerations and belong to the economic realm.

These two analytical distinctions are basic to Weber's characterization of rational action. Having described each separately, it must be considered how they cohere in the analysis of social action. The distinction between technique and economy is a distinction within types of social action rational in their choice of means—instrumental and value rational social action. We can represent the structural relationship of these types of social action as follows:

1. traditional
2. affectual
3. rational
   - A. instrumental
     - A. economy
     - B. technique
   - B. value

It must be asked whether these are in fact the same distinction, whether the means/ends relationships that are distinguished in each case are identical. Instrumental rationality exploits uniformities in behavior within the surrounding world (whether of things or persons) in order to realize discrete ends chosen and ordered by the self-interest of the actor in the light of the consequences involved in such action. Economic action chooses among a plurality of ends to which scarce means will be applied and considers also the effect the choice of one will have upon other ends. Structurally speaking, there is a similarity, as there is in the correlative case. Value rationality chooses adequate means to an end taken as absolute and therefore impervious to considerations of the consequences of the course of action. Technical action chooses the best means, on the principle of ''least action''—optimum result for least expenditure—to an end which, for technical purposes, is simply given. The similarity turns on the absoluteness of the end, within the sphere under discussion, and the nature of considerations relevant to the end. In general, considerations of the best means to an end are always relevant; considerations of expected consequences bear upon the choice of an end inversely according to its absoluteness—the more absolute the end, the less relevant are consequences. These general positions concerning rationality stand behind both distinctions.

Nevertheless, further elements are relevant; economy deals with *scarce* means since if there were no scarcity every end could be considered absolute and all considerations would be technical.[9] Instrumental rationality involves the decision between ends on the basis of self-interest since an end which transcends

[9]This is why under conditions of scarcity any type of action, even prayer, can become economic (Weber 1968, pp.339–340).

self-interest would not simply be *chosen* by the actor but *recognized* by him as the source of standards of choice between lesser, mediate ends. In other words, self-interest (conceived as widely as possible) requires that there be no *inherent value* that is there prior to and apart from the individual's decisions concerning ends; the persistence of a plurality of ends decided upon by self-interest requires viewing the ends themselves as devoid of an order preexisting among them prior to decision.

In this light it must be recognized that the two distinctions are of a different order. Only if one held that there is one absolute end to human life that is always clearly and ambiguously evident would dispute about ends be irrelevant. In this extreme case, all decisions upon courses of action would be technical since *at no level of consideration* would a plurality of ends appear. Leaving aside this case, it is clear that a decision between ends will occur at least at a lower, less universal level, thereby justifying the technique/economy distinction. At a higher, more universal level, where one considers the presence or absence of absolute values, the instrumental/value rationality distinction appears as soon as one considers absolute values problematic, i.e., as not simply evident. In fact the same distinction occurs on two levels: As soon as one admits mediate ends and scarce means, the technique/economy distinction emerges; as soon as one admits the possibility of a disharmony between self-interest and ultimate values, the instrumental/value rationality distinction appears.

It is, therefore, necessary to examine more closely the relationship of self-interest and ultimate values. The plurality of ends in instrumental rationality presupposes that there is no absolute value from which to order these ends—if there were they would be mediate (economic) ends rather than a discrete plurality. Decisions and compromises between these ends on the ground of self-interest imply that the entire plurality cannot be fulfilled.[10] The concept of instrumental ration-

[10]There are two possible sources for this inability to fulfill all ends: either a scarcity of means, generally, or the conflict of ends such that the fulfillment of one requires the non-fulfillment of another. This second case is also a scarcity of means, though it is a special case in which a scarcity of means for an end is created by the orientation towards another end. If it is recalled that scarcity refers not only to material goods, but, more generally, simply to situations in which requisite means are not plentiful for every possible end, then it is justified to use the term "scarcity" in the second case. We now have two types of scarcity: a *given* scarcity of means such that one must limit the ends to be fulfilled and a *created* scarcity of means for an end due to an action orientation towards a conflicting end. For example, if I want to be wealthy and, under given conditions must work 120 hours a week to be so then this creates a scarcity of time for my aesthetic appreciation of art—perhaps an end I value, though to a lesser degree. The scarcity of means for aesthetic appreciation created by my orientation to a conflicting end limits the possibilities of my achieving the aesthetic end in the same way as a given scarcity (say, of works of art to be viewed, or sufficient social status, money, etc. to enter the places they are kept) with one important qualification: It remains possible for my self-interest to reformulate the relative priorities of these two ends; in other words, the created scarcity is conditional upon the given arrangement of ends. The notion of a created scarcity is important for the evaluation of various techniques and technologies in socio-historical interconnection. For example, consider Ivan Illich's observation that industrialized traffic has lessened possibilities for walking (Illich 1974, pp. 15–19).

ality, self-interest deciding between a discrete plurality of ends, requires the concept of scarcity[11] which does not apply to value rationality since there are no conflicting ends. In this case the similarity of value rationality to technical action is striking. No considerations of consequences are relevant; there can be a technique of producing atmospheric air (Weber 1964, pp. 162–163). The best available means would be directed to the absolute value. In short, the instrumental/value rationality distinction reproduces the economy/technique distinction at a higher level of abstraction. The key element in these analytical distinctions concerning rational action is the defining of an end which is then taken as either absolute (technique, value rationality) or in relation to other ends (economy, instrumental rationality). Once an end is defined, means to its realization can be designed. In other words, technical action is the basic type from which the others are characterized. "Technique," in the wide sense which has been developed, does not refer to a specific order of ends but rather to the process by which an end is defined, whatever its scope or implications.

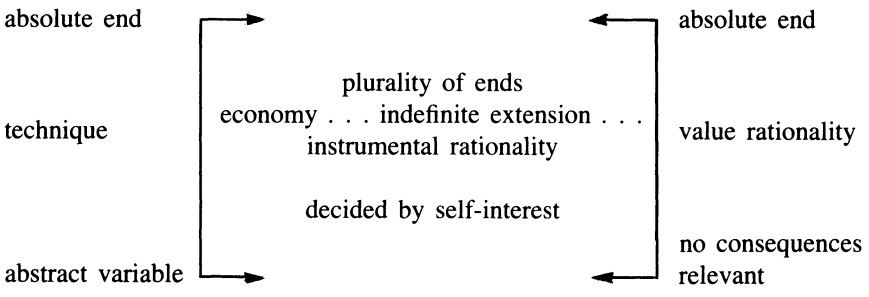
> What is to be concretely treated as a 'technique' is thus variable. The ultimate significance of a concrete act may, seen in the context of the total system of action, be of a 'technical' order; that is, it may be significant only as a means in this broader context. Then concretely the meaning of the particular act lies in its technical result; and conversely, the means which are applied in order to accomplish this are its 'techniques'. (Weber 1964, p. 161)

What is taken to be technique depends on the end which is absolutized, taken to be unquestionable, for present purposes. Obviously, this abstraction of a particular end from the total context must at some point be replaced within the total

[11]It should be noted that Weber denies that every instrumental action is economic precisely insofar as "economy" implies "scarcity." His example is praying, which is not economic "even though it may have a definite purpose according to some religious doctrine" (Weber 1968, p. 339). Obviously praying has a definite purpose, either toward an absolute value or one of a discrete plurality of ends. In the first case, it is not economic action, but neither is it instrumental rationality. In the second, if praying is directed to one of several ends which are, at least potentially, conflicting, it must encounter scarcity. One does not need to resort to an ultimate scarcity of time which overlooks all mortal action. In any case of conflicting ends a created scarcity is present. Though Weber did not develop this thought in his discussions of rationality, it is implied in the concept. Note the discussion of values in a rationalized world in "Science as a Vocation" " . . . .the ultimately possible attitudes towards life are irreconciliable, and hence their struggle can never be brought to a final conclusion. Thus it is necessary to make a decisive choice" (Weber 1976, p. 152). Talcott Parsons has noted a tendency for Weber's instrumental/value rationality distinction to shift so that value rationality refers to a "system of ultimate ends, regardless of their degree of absoluteness" and instrumental rationality to "considerations respecting the choice of means and ends which are in turn means to further ends" (Weber 1964, ed.'s footnote 38, p. 115). The distinction has shifted from one of types of action to one of elements of action systems (Parsons 1961, p. 660). Given that Weber's criterion for instrumental rationality in the original negative case under discussion is that the action had a "definite purpose," it seems that this shift is here operative since it is not a sufficient criterion for instrumental rationality as defined.

system of competing economic ends. But the technical element depends on the abstract moment at which the particular end is considered absolute; therefore, it varies according to which end is taken as absolute at any given time. For example, what is absolute in present deliberations may, subsequently, be compared with other ends. At that time what is technical will not be in relation to the initial end but to whatever further end is absolutized in the deliberation between ends.

Considering Weber's concept of rationality that lies behind these distinctions, it is clear that the essential relation is between the end which is taken as absolute, given, for present purposes and further considerations in which the end is relativized and compared to further ends. However, decision between these relative ends may be on the basis of a further end which is, for those purposes, absolute. The instrumental/value rationality distinction refers to the conclusion of this chain of considerations. Instrumental rationality expresses the position that the series concludes in a set of ends beyond which no appeal to a further end is possible; value rationality refers to a final end which could resolve conflicts between lesser ends and which, consequently, cannot be judged by the effects which action oriented toward its realization will have on lesser ends. The technique/economy distinction refers to the initiation of the chain of conclusions, in which an abstract technical element with one end is placed within an economic sphere of plural ends. When these are resolved by reference to a further end, the technical element shifts correlatively. Thus, while these distinctions are structurally similar and embody identical presuppositions concerning the nature of rationality, they refer to different stages in the description of rational action. This may be diagrammatically characterized as follows:



Weber's characterization of rational action is based upon a technical model. This discussion has demonstrated the abstractness of technique, in which only one end is considered. Also, it has demonstrated the necessity of a concept of economic action, insofar as the world cannot be taken to be exhausted by technical actions; we are often required to decide between ends. Furthermore, the notion of self-interest has emerged as central to the discussion; if many ends co-exist and there is no ultimate value which can decide between them, the decision is left to the self-interest of the actor. These interwoven conceptions will be pursued further in

the following sections. It is Weber's description of the modern world which clarifies their relationship; this is pursued through an account of Weber's third distinction between formal and substantive rationality.

II THE PREDOMINANCE OF TECHNIQUE

The formal/substantive rationality distinction is of a different type from the other two because it incorporates socio-historical prerequisites into its definition. The instrumental/value rationality and technique/economy distinctions are analytical distinctions that refer to an individual actor's course of action in any society. But the formal/substantive distinction comprehends the distinctiveness of the socio-historical structure of the modern world. It is the key to Max Weber's description of the modern world as a socio-historical epoch dominated by technique.

The distinction between formal and substantive rationality is made in reference to economic action.

> The term 'formal rationality of economic action' will be used to designate the extent of quantitative calculation which is technically possible and which is actually applied. The 'substantive rationality' on the other hand, is the degree to which a given group of persons, no matter how it is delimited, is or could be adequately provided with goods by means of an economically oriented course of social action. (Weber 1964, pp. 184–185)

Formally rational economic activity refers to the extent to which the provision for needs can be and is expressed numerically, in calculable units. In this connection Weber refers to double-entry bookkeeping as the most highly developed form of rational calculation, i.e., formal rationality, which is best expressed in monetary terms (Weber 1964, pp. 193, 185).[12] Substantive rationality, on the other hand,

> conveys only one element common to all the possible empirical situations; namely that it is not sufficient to consider the purely formal fact that calculations are being made on the grounds of expediency by the methods which are, among those available, technically the most nearly adequate. (Weber 1964, p. 185)

Economic activity is oriented to ultimate ends of some type; substantive rationality considers the relation of economic activity to the content of these ends—it considers the result, the outcome of the activity. Obviously, there are an indefinite number of these ends. Substantive rationality, embracing all of these, therefore derives its significance negatively, that is, from the *insufficiency* of formal criteria in evaluating economic activity.

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[12]It is interesting to note that Aristotle considered exact bookkeeping to be niggardly. This niggardliness is one of the socio-historical substantive conditions for the emergence of formal rationality. *Nichomachean Ethics*, 1122b.

The formal rationality of economic activity rests on certain substantive conditions (i.e., upon the orientation of economic activity to certain ends) since it is obvious that rational accounting and a money economy have not developed equally under all social and historical conditions.[13] In this connection it is sufficient to note the following substantive prerequisites: the complete appropriation of non-human means of production by owners, market freedom, competition of autonomous economic units, free labor (i.e., the absence of workers' appropriation of jobs or owners' appropriation of workers), and capital accounting (Weber 1964, pp. 275, 211). Capital accounting is the most rational form of money accounting; it is peculiar to "rational economic profit-making" (Weber 1964, p. 191). In short, the essential substantive conditions which maximize formal rationality are those of competitive capitalism, including free labor and an unrestricted market, with its substantive orientation to profit-making by the individual enterprise.

On the other hand, the extension of formal rationality in economic action calls forth attempts at substantive rationalization such as socialism and communism. Weber therefore notes that substantive and formal rationality are always in principle in conflict, though they may coincide under exceptional conditions (Weber 1964, p. 212).[14] The relationship of formal and substantive rationality can be clarified with reference to a further distinction of Weber's. Both of these refer to

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[13]Weber notes that, "Both calculation in kind and in money are rational techniques." and that, "Everywhere it has been money which has been the means in terms of which calculation has been developed." " . . . calculation in kind has remained on an even lower technical level that the actual nature of its problems might have necessitated." (Weber 1964. pp. 210–211). Money calculation is, therefore, the most developed rational technique of formal rationality in economic action.

[14]*See* Bendix 1962, pp. 431–438, with reference to the legal sphere. The relationships of formal and substantive rationality has been characterized as a "dialectic" (Reinhard Bendix) and a "reciprocal tension" (Talcott Parsons) though neither of these terms is adequate (Bendix in Stammer 1971, p. 160. Talcott Parsons in the introduction to Weber 1964, p. 37). Formal rationality relies on substantive conditions while its development calls forth substantive claims against the dominance of formal rationality. A dialectic would require that formal rationality undermine those very substantive conditions that it required and that, further, substantive rationality has formal conditions which its development would tend to undermine. The latter does not obtain and, indeed, it is unclear what a "development" of substantive rationality would mean here. One example of the former case is available, though it is not tied by Weber to the types of rationality. "The regulation of markets, as an economically rational policy, has been historically associated with the growth of formal market freedom and the extension of the marketability of goods" (Weber 1964, p. 183). In other words, the market freedom which promotes formal rationality leads to the growth of substantial market regulation by monopolies. Even in this case, the market is left formally free; it is the substantive effect of formal rationality that is compromised. Parsons' formulation of "reciprocal tension" would, at least, require some formal conditions of substantive rationality or some formal effects of its development, neither of which Parsons himself attributes to Weber. A more accurate formulation would have to accentuate the one-sided dependence of formal rationality and yet recognize that formal rationalization does have substantive effect—it is not simply a dependent variable—without inflating this effect to the independence attributed by Weber to substantive rationality.

economic action, as was pointed out above. Weber formulates a distinction between "economic" and "economically oriented" action in order to clarify the separation of spheres of economic action in the modern world. The latter is concerned with satisfaction of desires for utilities in one of two ways: First, though primarily oriented to other ends, it takes economic considerations into account. Secondly, action may be primarily oriented to economic action but makes use of physical force. Economic action, in contrast, is peaceful and primarily economically oriented, that is, consciously oriented to economic ends (Weber 1964, pp. 169–170). A similar distinction is put forward by Karl Polanyi with respect to the isolation of an economic system of production from society.

> A self-regulating market demands nothing less than the institutional separation of society into an economic and a political sphere. Such a dichotomy is, in effect, merely the restatement, from the point of view of society as a whole, of the existence of a self-regulating market. It might be argued that the separateness of the two spheres obtains in every society at all times. Such an inference, however, would be based on a fallacy. True, no society can exist without a system of some kind which ensures order in the production and distribution of goods. But that does not imply the existence of separate economic institutions; normally, the economic order is merely a function of the social, in which it is contained. Neither under tribal, nor feudal, nor mercantile conditions was there, as we have shown, a separate economic system in society. Nineteenth century society, in which economic activity was isolated and imputed to a distinctive economic motive, was, indeed, a singular departure. (Polanyi 1971, p. 71)

This distinction is also stated by Polanyi in terms of his conception of "embeddedness". "Instead of economy being embedded in social relations, social relations are embedded in the economic system, i.e., in a self-regulating market economy" (1971, p. 57). What is important here is the separation of an economic motive and, consequently, economic action from the interrelated complex of social goals and actions. Weber's distinction separates a situation where economic ends are intertwined with other ends from a situation where they are conscious and primary. Economically oriented action, embedded in extra-economic ends and impinging on them all to some degree, cannot be evaluated as to its success from an economic point of view alone, or from any single point of view, but only in terms of the multiple ends which are in complex relation. Economic action, in Weber's sense, involves the conscious separation of economic ends from others and therefore allows an unambiguous evaluation of the contribution of means to these ends.

This distinction whereby Weber characterizes a distinct sphere of economic action disembedded from its context provides a clue to his concept of rationality. A distinct type of action which is separated from the complex whole on the basis of the orientation of the actor being exclusively towards certain ends involves

also a grouping of these ends into a type. Such ends are similar in the sense that they are all ends pursued by and pursuable by such action; in this respect, they are comparable. An embedded economic action would be oriented to ends of varying types that could be later distinguished (as, say, aesthetic, political, personal, and economic) that could not be compared since they are simply different, though a hierarchy among them could be posited. On the other hand, separated spheres enclose similar and, therefore, comparable ends, though the relation of these to other ends in separate spheres is left aside.

Rationality, as it is expressed in the two analytic distinctions discussed in the previous section, presupposes the separation of an economic sphere from the total complex of action. This separation is comprehended in the distinction between formal and substantive rationality. Actually, one must speak of the separation of economic spheres since a plurality of spheres each organized around a scarcity of means with regard to commensurable ends is implied by Weber's wide definition of "economic action." This separation occurs in what we might call the "modern world" since, for Weber, the designation "competitive capitalism" leaves out the equally important factors of science, religion and the state. The existence of separate economic spheres in the modern world allows the characterization of ideal types of social action, including subdivisions within the rational types, by which we can evaluate social action insofar as it approximates these rational types. Strictly speaking then, one need not claim the *actual* separation of these spheres (in any case, "separation" is not meant to exclude reciprocal influence) but only that such separation is a tendency or a principle in modern society which can be utilized in the creation of ideal types that render social action comprehensible. The distinctions between technique/economy and instrumental/value rationality that emerge in the modern world are, thus, analytical and are not limited in their applicability to this world. Technical, economic, instrumental, and value rational actions existed in pre-modern societies; however, they were not exclusively of these types. The conscious and unambiguous—rational—formulation of means/ends relations within separate economic spheres requires the separation of ends into homogeneous groups within these spheres, heterogeneous between groups. Social analysis can reformulate the means/ends relation within each group with reference to ideal types characterized on the basis of this separation of spheres, but it cannot claim to exhaust any social action with respect to any one type, that is, any one sphere of homogeneous ends. Especially in pre-modern societies social action is not oriented exclusively, or primarily, to one economic sphere; it is involved in realizing heterogeneous ends. In fact, as Weber points out,

> Economic action may be a matter of tradition or expediency. Even in cases where there is a high degree of rationalization of action, the element of traditional orientation remains considerable. For the most part, rational orientation is primarily significant for the directing agencies, no matter under what form of organization. The development of rational economic action from its

> origins in the instinctively reactive search for food or in traditional acceptance of inherited techniques and customary social relationships has been to a large extent determined by non-economic events and actions, including those outside everyday routine and also by the pressure of necessity in cases of increasing absolute or relative limitations on subsistence. (Weber 1964, p. 166)

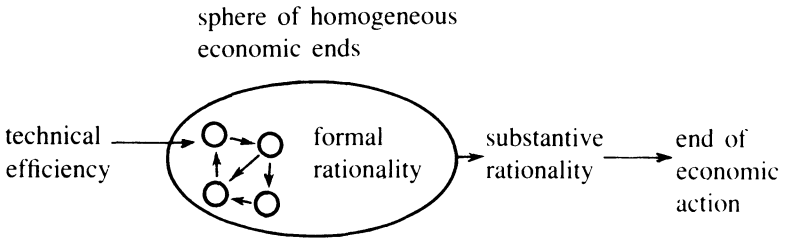
Nevertheless, given that these analytical distinctions have emerged in a specific segment of history, the modern world, a further distinction is necessary to express the specificity of this socio-historical event such that the conditions for the comprehension of social action have arisen.

The substantive rationality of economic action considers the relationship of economic activity to the ultimate ends to which economic activity is directed. There are an indefinite number of these ends and they are mutually heterogeneous and incomparable. However, one of these substantive ends, profit-making, which is most complete under conditions of competitive capitalism (including unrestricted market freedom and free labor), provides the conditions for a maximization of formal rationality. Formal rationality is the rational calculation of the provision for needs numerically. Numerical accounting reaches its apogee in a total money-economy, that is, when all economic factors are accounted for solely in monetary form. This is why scientific management (in which the worker is calculated as simply another factor of production), private ownership of the means of production (which excludes extra-economic factors from the organization of production), and unrestricted market freedom (which excludes extra-economic factors from the exchange of goods and resources) are reckoned "rational" by Weber: they all express conditions in which impediments to the exchange of monetarily calculated quantities by their connection with extra-economic ends are removed.[15] This distinction clearly overlaps the distinction discussed earlier between economically oriented action and economic action in which a sphere of a plurality of homogeneous ends is separated from their connection with a complex of heterogeneous ends. However, in contrast to the focus upon the *separation* of a sphere in the earlier distinction, the concept of formal rationality thematizes the calculability of means possible within this sphere after its separation; substantive rationality refers to the relationship of these calculable means to the end which the entire sphere of economic action is directed towards.

Once ends are conceived as homogeneous they can be weighed against each other in "economic" terms. Once economic decisions have decided priorities among these ends, available scarce means can be measured and calculated to produce the optimum result. Stipulation of homogeneous ends allows one to consider each end abstractly as absolute and thereby to consider "technical" ques-

[15]These are seen to be related factors by Weber. Cf. Weber 1968, p. 1156; Weber 1976, p. 261; Weber 1964, pp. 261, 275.

tions in the realization of the end. Formal rationality considers the calculability of scarce means to the complex of homogeneous economic ends; this element is the greatest when profit-making is the substantive end of economic activity. Once the distinctions between technique/economy and instrumental/value rationality have allowed the preliminary concept of rationality sketched above, formal rationality refers to the *degree to which this rationality is accomplished,* which is why it refers to historical conditions not merely analytically but for its content. Substantive rationality is required as a negative concept to express the fact that the degree of accomplishment of rationality, i.e., formal rationality, is abstracted from the fulfillment of human ends, which are nevertheless always present concretely. The relationship of these factors can be expressed diagrammatically as follows:



The relationship of technical efficiency, which considers the adequacy of means to a single abstracted economic end, to formal rationality, which considers the total calculability, and therefore efficiency, of means within the sphere of homogeneous economic ends, must now be considered. Formal rationality would obviously be maximized if the technical efficiencies in each case were maximized. Though this is impossible as long as economic decisions must be made between ends due to scarcity, it is the limit to which the development of formal rationality tends. Formal rationality, therefore, promotes technical efficiencies and, in general, an increase in technique is an increase in formal rationality. There is only one negative case: when the means expended in increasing the technique towards one end would have yielded greater results towards another—when it is uneconomical.

From this angle it becomes comprehensible why technical advance depends, through the medium of formal rationality, on the substantive end of profit-making. Substantive rationality refers to the relationship of economic action to the content of the ultimate ends to which it is directed. The modern world shares with all other ages the existence of these ultimate ends, though their content may well, and obviously does, vary widely. Formal rationality, on the other hand, refers to the calculability of means within economic spheres *without reference outside the sphere of homogeneous ends* to the end of the economic sphere itself. It depends upon and expresses this separation of spheres which is the condition

for the separate calculation of means through the establishment of a homogeneity of ends with reference to a particular scarcity.

The maximization of technical efficiencies to individual ends within spheres, generally speaking, maximizes formal rationality as the calculability of the total means of a sphere without reference to its substantive end. Formal rationality is, therefore, the sum of technical efficiencies within a functionally isolated sphere. It can be this "sum" because, containing no reference to a substantive, qualitative end, the problem of the overpowering development of technical means to one end such that it endangers its economic co-ordination with other ends to fulfill the substantive end of the whole sphere is not raised—the problem of "uneven development." As this concept expresses the distinctiveness of the modern age as the separation of spheres, it is not surprising that formal rationality is greatest under modern conditions of bureaucracy and money-economy in which all economic factors (in the narrower sense) are expressed monetarily. These are formally superior, as Weber says, "from a technical point of view."[16] Further, since formal rationality maximizes technical efficiencies with respect to *all the homogeneous ends* within a functional sphere without reference outside the sphere, it is related to instrumental rationality in which a plurality of ends are decided by self-interest. However, where instrumental rationality must decide *between* conflicting ends, formal rationality, when it is at its greatest, expresses a situation in which all ends are maximized together. Therefore, formal rationality represents the highest development of instrumental rationality in which efficient techniques have multiplied to the extent that all instrumental ends can be maximized.

The existence of substantive ends represents the continuity of the modern age with pre-modern societies. However, the generality of this concept, which stems from its negative definition from formal rationality, subsumes all substantive ends as "equally" substantive. They cannot be compared, since their designation is devoid of real content and applied to ends differing as widely as profit, art and piety. Consequently, the measurability and unambiguity of formal rationality allows it to become the determinate concept of rationality in Weber's theory of rationalization. Though rationalization begins from many disparate roots in all aspects of life, the growth and interconnections of rationalized aspects leads eventually to complete rationalization in the modern world. This is, as Gerth and Mills (1976, p. 66) note, a "sublimated concept of progress" but it is one that, ultimately, must attribute rationalization to a mysterious process since there is no comprehensible initial impetus to the process and the idea of progress terminating in the "good life" has been abandoned. The disenchanted world ushers in a society which is founded on the predominance of technique.

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[16]See Weber 1976, p. 214; Weber 1968, p. 1116; Weber 1964, pp. 186, 193, 337. Cf. Talbott Parsons' remark that, "The contrast between rational-legal and traditional authority is associated by Weber with that between formal and substantive rationality" (Introduction to Weber 1964, p. 64) " Cf. also Beetham 1974, p. 257.

III TECHNIQUE IN THE MODERN WORLD

It has been argued above that technical action is the model from which Weber designs his typology of social action. Also, that the possibility of comprehension of social action emerges in the modern historical period in which technique predominates and which is thus a social order of maximum rationality. It must now be asked: In what sense does technique predominate? Or, in another formulation: How accurate is Weber's description of technical action?

Although technical action is the fundamental type of social action, Weber recognized that actors are often presented with situations in which several ends must be considered. This "economic conflict of ends" is the basis for his recognition that social actors are not more informed in the society in which technique predominates.

> The savage knows incomparably more about his tools. . . .The increasing intellectualization and rationalization do *not,* therefore, indicate an increased and general knowledge of the conditions under which one lives. It means something else, namely, the knowledge or belief that if one but wishes one *could* learn it at any time. Hence, it means that principally there are no mysterious incalculable forces that come into play, but rather that one can, in principle, master all things by calculation. This means that the world is disenchanted. (Weber 1976, p. 139. Emphasis in original; paragraph separation omitted.)

Thus, individuals conduct themselves on the belief that the technical condition of modern life can be made clear to them even though, for the most part, these conditions are not understood. However, this belief is unjustified, in a double sense. First of all, while it is probably possible for an individual to acquire the technical knowledge of a given specialized domain of life, say, steel production, transportation schedules or somesuch, one cannot pursue all of the technical conditions of life. The mastering of technical knowledge makes one a specialist in a certain domain; while one may specialize in several domains, it is clear that one cannot gain specialist knowledge of all of the domains which comprise modern conditions of life. Thus, the belief in the possibility of learning technical knowledge is necessarily limited in extent; one is required to believe in the authority of specialists in other domains. The second point is more central. Clarification is limited to specialized technical domains. The combined effect of technical conditions, economic conflict of ends, is systematically excluded from scientific consideration by Weber. Thus, the belief that one can learn the conditions of life is systematically blocked when one considers these conditions to be a result of a compiled plurality of techniques. Furthermore, the wide sense of technique must be recalled. Social techniques, human engineering, behavioral control, etc. are all part of our technical conditions of life. Despite the systematic limitation of technical knowledge in comprehending the conflict of technical ends, an adherence to technical scientific clarifications supposes that human action is not, and

cannot be, ruled by incalculable, non-technical considerations. Consequently, the sense in which the modern world is characterized by the predominance of technique must be re-evaluated. It is characterized to a correlative extent by belief in technical experts, ignorance of the cumulative effect of techniques, and legitimation of the extension of techniques by science. To some extent, these were recognized by Weber and in this sense he is a self-conscious proponent of technique, though they did not penetrate into his theory of rationalization. Indeed, they could not, since science and theory were limited, in his view, to technical clarifications. According to Weber, science contributes techniques of controlling objects and techniques of thought to human life. Beyond this he claims clarity. "*If* you take such and such a stand, then, according to scientific experience, you have to use such and such a *means* in order to carry out your conviction practically" (Weber 1976, p. 151). But science cannot put the "if" itself to question and say whether or not the end which is posited is truly valuable, worthwhile or enlightening. The clarification that science offers is concerned with adequate means to a given end but it does not criticize the given end and accepts its positing as prior to science. Science cannot question the meaning of social action; it cannot question whether "knowledge" might not lead as easily to tyranny, self-destruction or blindness as enlightenment.

Disenchantment involves the predominance of technical action; this extends to the conception of scientific knowledge in the rationalized world. Insofar as social actors attempt to act rationally, they approximate the technical clarifications provided by specialized sciences. Although this essay has not investigated Weber's epistemology of social science, it is evident that the fact/value distinction on which it rests is based on the model of technique in social action. Since there is no rational basis for evaluating, and choosing between, a plurality of technical ends, science—as technique—abstracts from ethical questions. When one considers the utilization of technical knowledge in social action, a dilemma arises. It is here termed a "false alternative" to indicate that it is an entry into a critique of Weber's model of technical action.

The dilemma for social action indicates the false alternative of technology and decisionism with which rational action is confronted as long as technique is the model of action. Technocracy refers to the belief that experts, masters of techniques, are the proper guardians of practical action. If science is always specialized knowledge, then rational action in the everyday world is limited to the application of techniques to isolated problems and events. The context within which individual cases occur and also unintended side-effects due to a conflict in the pursuit of several isolated ends must remain outside rational discourse. Technocracy is, in this sense, a functionalism in which the adequacy of each part is questionable and can be rationally considered but for which the context, the end, or the conflict of ends remains necessarily outside consideration.

The other side of the coin in the false alternative for social action has been termed "decisionism." Decisionism removes the practical world from rational categories; it conceives the practical world as subject to the arbitrary decision of

willed ends. A decisionist has recognized the important aspects left out by technocracy outlined above, but regards these as limits to reason *per se* and consequently remains within the predominance of technique.[17] Technocracy and decisionism thus co-exist equably; an extreme rationality of techniques and functions complements a-rational decision-making with respect to ends.

The model of technique engenders a belief in experts simultaneously with specialized knowledge. Moreover, the attempt to avoid the consequences of technocracy lands one in a decisionistic severing of social action from knowledge if the fundamental predominance of technique is not adequately criticized. From these indications we can proceed to sketch two related aspects of technical action which are ignored in Weber's characterization: the practical context within which technique functions and the impact of action within a separated sphere upon the entire complex of domains.

It was remarked in section one (above) that what is to be considered technique in Weber's sense is not unchangeable but is relative to the particular end which, for present purposes, is decided upon. Thus, the fundamental component in the determination of a technical action is the abstraction process whereby a single end is isolated and defined. Fixing upon and defining an isolated goal presupposes a prior practical context from which the end stands out. The practical context might be likened to the *ground* from which the *figure* of technique stands out. For example, one may define the end of maximum output of automobiles; one does so from a context of existing labor relations, methods of production, and pressure from competitors. Or, one may wish to eliminate bed-wetting, a goal which achieves definition from the entire context of practices in which it has meaning for both the bed-wetter and the behavioral technician. It is important to recognize that the practical context is not a repository of other ends, though indeed other ends may be defined from it. Rather, it is prior to the process of thematization by technique. Consequently, the practical context is not explicit in technical action even though it is carried over into the formulated end. When I formulate the goal of visiting a friend in Europe, I presuppose the complex of social and technical arrangements that make it possible for me to travel in the requisite time, style, etc. These arrangements, such as the existence of high-speed jet aircraft, are carried over into the end—they are the mode of transport—but they are not the end itself—the visiting. In this sense, the practical context is the pre-existent and presupposed foundation from which technical ends are defined and which are carried over in the performance of technical actions.[18]

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[17]An early account of decisionism is Marcuse 1968. A contemporary account is given in Habermas 1973, pp. 263–268.

[18]This critique of Weber is not coincident with Habermas' utilization and critique of Weber. He distinguishes "purposive-rational action" from an alternative logic of "communicative action." The present account does not seek to limit technique externally, but to discover the presupposed context which is carried over into technical actions (Habermas 1970).

The presupposed practical context is significant also for the characterization of the disenchanted modern world as separated homogeneous spheres. Weber's typology of social action presupposes the separation of spheres in the modern world whereby, for example, economic, political, aesthetic, etc. ends are distinguished from one another. Thus, pre-modern "economically oriented action" is embedded within other ends which are heterogeneous and incomparable with strictly "economic" concerns. Modern "economic action" separates a sphere of ends which are all equally "economic" and, in this sense, homogeneous. Formal rationality expresses the tendency of rationalization to separate these spheres which allow a maximization of technical ends through the efficient allocation of means within each sphere. Since these spheres are heterogeneous, they could only be ordered by a transcendent principle which is taken as an authoritative source of evaluation. Max Scheler has termed such an ordering principle the "relative natural conception of the world."[19] In Weber's characterization, such an ordering of spheres is without rational foundation in the modern world. Formal rationality restricts consideration within spheres and secures the predominance of technique.

The dichotomy of formal and substantive rationality involves an historical thesis. Prior to modern technical expertise human actions were devoid of reason. They are incomprehensible to us. More accurately, they are comprehensible only to the extent that they anticipate the disenchanted world. Science and tradition confront each other as light and darkness; humanity before our time is reasonable only insofar as it is a forerunner of specialized illumination. The tendency of the modern world according to Weber is the replacement of all conventional, traditional action by specialized functions. This tendency involves the impossibility of an overarching "relative natural conception of the world" in Scheler's sense. Separate specialized spheres in which technical efficiencies are pursued invalidate any higher conception of reason by means of which these separate spheres could be ordered. Consequently, in the socio-historical era in which technique predominates there can be no hierarchical principle that can order specialized domains. That is to say, no such ordering-principle can be conceived within Weber's concept of rationalization. Obviously, one could decide upon such a principle and utilize it in making value judgements, but it can gave no rational foundation. Max Weber's conception of value rationality accords with this possibility. It is an absolute value principle that orders subsidiary instrumental concerns. However, as was demonstrated above, technique has invaded this ordering-principle also; it is based upon a technical model in which only one end is relevant and there can be no rational discourse concerning this end. Max Weber's description of the modern world cedes all action to the blinding light of technique.

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[19]See Scheler 1960, pp. 60–63, *relativ naturlichen Weltanschauung*. Alfred Schutz appropriates Scheler's term in his discussion of this question concerning the "order of domains of relevances", which is clearly also indebted to Weber (Schutz 1971b, pp. 242–243).

When one considers the practical context within which technical actions are pursued, the characterization of the modern world as separated spheres must also be re-evaluated. The practical context deserves a full-fledged inquiry on its own account, but this is not the purpose here. For simplicity, we can consider only the conventional meanings which are utilized in technical actions—such as the manner in which language is utilized in discussing the results of experiments on animals in mazes or conventions concerning seating are present when one decides to manufacture chairs or, on the other hand, mats—though this by no means exhausts the significance of the practical context. In Weber's view such conventional meanings can only be the remnants of traditional action not entirely supplanted by technique. Closer consideration, however, will disclose the impossibility of ever eliminating convention. This can be made explicit through a distinction between convention and tradition.

The overcoming of convention that Weber attributes to the modern world derives from his equation of rational action and technique. However, one must recognize conventions, which surround and penetrate technical actions, as residing in the practical context within which techniques are applied. Conventions are defined in relation to technical actions and are meaningful only insofar as they are contextually presupposed by those techniques. Tradition, on the other hand, refers to an organizing-principle of Scheler's type which could order the heterogeneous domains; it refers to an overall organization of specialized domains in which the ultimate principle for the interpretation of the world is evident, unquestioned. Tradition, in this sense, lays claim to being a principle of organization which is unrestricted in its justification and application. First, it should be noted that if such a principle were available in the modern world the predominance of technique would be a mere appearance which is dispelled when one recognizes the ultimate organizing-principle. It would deny that disenchantment forces upon us a new dilemma which requires a radically new departure in the understanding of technical action.

Conventions cannot provide the justification of a traditional ordering-principle in the modern world since their scope has withered to the surrounding context of technique. Tradition, which is a universalization of convention, is unreasonable after the burning clarity of disenchantment. The present critique attempts to indicate a fuller understanding of technical action than that proposed by Weber. However, it does not dispel the predominance of technique as mere appearance in order to refurbish an organizing-principle. In other words, tradition has been shown to be irrevocably partial—there are always traditions. Consequently, the recognition of a presupposed context of practical maxims—conventions—does not dispel the new situation ushered in by disenchantment.

For critics and proponents of disenchantment and modern technology alike, Weber's work has become an important reference point. The present essay has attempted to redress the usual focus on Weber's conception of science with an extended discussion of rational action which, as is demonstrated above, is modelled on technique. Phenomenology and Critical Theory (despite many dif-

ferences) converge on criticism of the contemporary universalization of technical action. To this extent re-evaluation of Weber's theory of rationalization has contemporary significance. Max Horkheimer's demonstration of the reduction of traditional meanings to residues which is performed by subjective reason can comprehend both the survival of conventions and the sense in which subjective reason poses a new dilemma for theory (see Horkheimer 1974, Ch. 1). The conventions which survive surround techniques; they are the irreducible practical dimensions of meaning which technique presupposes. However, since these are defined *from* technique, they cannot provide a conventional organizing-principle which would shelter instrumental reason within tradition. Tradition has been shattered into conventions which surround the residues left by instrumental reason. Thus, to the three aspects of the modern world which were pointed out earlier—belief in technical experts, ignorance of the cumulative effect of techniques, and the legitimation of the extension of techniques by instrumental reason—can be added a fourth: the limited conventions which surround techniques.

The imminent danger is that, under the continued sway of technique, the world of action will lose any relationship to truth. Disenchantment, persisting on a claim to enlightenment that has reversed, threatens to finally sacrifice truth to technique. In order to renew a claim to enlightenment the functioning of technique in human action must be understood within the unformulated practical context in which it is applied and which is carried over into technical ends. A renewal of the claim to enlightenment requires a comprehension of technique as an alteration and definition of the practical context such that human action can encompass the goal of enlightenment within the limited ends of technique. Thus the present task of thinking beyond disenchantment takes us to a characterization of technique as embedded in the entirety of human action. In Husserl's words:

> Can one not [turn to] the life-world, the world of which we are all conscious in life as the world of us all, without in any way making it into a subject of universal investigation, being always given over, rather, to our everyday momentary individual or universal vocational ends and interests—can one not survey it universally in changed attitude, and can one not seek to get to know it, as what it is and how it is in its own mobility and relativity, make it the subject matter of a universal science, but one which has by no means the goal of universal theory in the sense in which this was sought by historical philosophy and the sciences? (Husserl 1970, Appendix VII, p. 383)

Technical action, through the medium of the practical context, establishes priorities among the various limited ends within a homogeneous sphere of action. Moreover, it is the process of defining ends, as well as choosing among defined ends, and consequently affects the internal characterization of the sphere. Furthermore, technical action establishes a relative priority of spheres. Without an organizing-principle, the whole world of human action is priorized by technique.

However, the discovery of the practical context demonstrates that technique predominates only in the sense that disenchantment excludes a traditional organizing-principle. Actually, the "predominance" of technique must henceforward be understood as a specific constellation of the practical context. Only through a detailed understanding of technical action can this displacement of technique be accomplished.

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