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Weber's Ideal Types and Idealization*

Max Weber's writings on "ideal types" (ITs) have been an important influence in the debates on the philosophy and methodology of the social sciences and humanities. In the context of the Poznań School of philosophy of science, at least two contributions to the reconstruction of ITs have emerged. The historically prior approach is due to Leszek Nowak and was first formulated in English in *The Structure of Idealization* (1980). The second one was presented by Izabella Nowakowa (2007). The first part of my paper briefly recapitulates both accounts and argues that neither of them adequately captures the intent of Weber's conception. Therefore, in the second part, I put forward a different reconstruction, based in part on Martin R. Jones' (2005) understanding of the methods of abstraction and idealization. I show that the construction of ITs, as described by Weber himself, involves the application of both of these methods. I propose to view ITs as *ideal objects* similar in nature to the "point mass" or the "simple pendulum" of physics. Analysing one of Weber's examples of the use of ITs, I conclude that their heuristic import lies in their role in the formulation of *contrastive explanations* of social phenomena.

1. THE POZNAŃ SCHOOL ON WEBER'S IDEAL TYPES

Before turning to the reconstructions in question, it seems appropriate to briefly summarize some of the key points of Weber's conception, in order to arrive at a standard against which the methodological analyses can be compared. In Weber's view, all sciences strive for an "intellectual ordering of empirical reality" (Weber

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2012c: 102) by means of "concepts" (*Begriffe*) (Weber 2012c: 135). Since phenomena are characterized by "infinite multiplicity", both "extensive" and "intensive" (Weber 2012e: 40), their processing into concepts is necessarily selective. For Weber, all concepts are the result of some process of abstraction which sets apart those aspects of reality that are deemed relevant (relative to certain cognitive goals) from those that are not. In line with the neo-Kantian tradition, Weber distinguishes two major kinds of abstraction: generalization, which focuses on the common characteristics shared by several phenomena and collects them together in a single concept, and individualization or isolation, which extricates the aspects specific to a particular phenomenon and disregards those that it holds in common with other phenomena. These two forms of "concept formation" (*Begriffsbildung*) lie at the basis of two different cognitive strategies and two different kinds of science.

The goal of natural sciences is the ordering of reality by means of "*relational* concepts" or "laws" which have the form of "causal equations" (Weber 2012e: 5). Formed by generalizing abstraction, such general "concepts" enable the subsumption of the most disparate phenomena. The price to pay for the relatively wide extension of such concepts is their relatively meager content: they represent empirical reality as devoid of qualities (Weber 2012e: 5).[1] However, with regard to the cognitive goals of natural sciences, this does not present a problem. By contrast, the task of social sciences is to attain "knowledge of *reality*, with its constant and universal character of qualitative differentiation and uniqueness" (Weber 2012e: 5). Hence, "what matters to us in the social sciences is the *qualitative* aspect of events" (Weber 2012c: 115). The corresponding mode of concept formation is, therefore, the individualizing abstraction. Yet, faced with the infinite multiplicity of all phenomena, a further criterion is required to select those aspects of an event which not only are unique to it but also are regarded as more relevant than others. This criterion is the "value relation" (*Wertbeziehung*):[2] in their concepts, social scientific disciplines capture those aspects of phenomena which are relevant with respect to certain values.[3]

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[1] In this respect, Weber's conception draws on the traditional, and now long outdated, doctrine of the inverse proportionality between the extension and the content (intent, comprehension) of a concept. However, I shall not deal with this aspect of Weber's conception in more detail.

[2] Earlier English translations of Weber's writings use the fitting term "value-relevance".

[3] For purposes of this paper, the following example will suffice: in forming the concept of a unique historical event (such as World War I), the historian can choose from an infinite number of aspects which distinguish it from other events. Based on the criterion of value relation, she chooses those which are relevant with regard to the cultural problems she (or "her time") considers important. Thus the aspect of World War I which merits the inclusion into the corresponding concept could, depending on the wider context, be imperialism, the historically unprecedented use of tanks, the fact that the war broke out shortly after the assassination of Archduke Franz Ferdinand, etc. Needless to say, Weber thought that the criterion of value relation was specific to the social sciences. And since the context of values which forms the background of these disciplines is constantly changing, it is legitimate for scholars to return to phenomena that had already been treated by other scholars from the viewpoint of different values. Therefore, these disciplines shall remain "eternally youthful" (Weber 2012c: 133).

It should be noted that Weber never viewed the distinction between the natural and social sciences as absolute — in the sense that the former would *never* form individual concepts by means of the isolating abstraction and the latter would *never* use the generalizing abstraction. Even a natural-scientific discipline can assume a historical, individualizing viewpoint, as when physical geography studies the origin of a particular mountain. Similarly, a social-scientific discipline may form law-like generalizations which capture the common features of many disparate phenomena. According to Weber, the distinction only strictly applies to "pure mechanics" on the one hand and to "certain parts of historical science" on the other (Weber 2012e: 6). In the case of other disciplines, it only refers to the *predominant* cognitive goals and methodological practices.

Apart from concepts which are the result of one of the two types of abstraction discussed above, Weber identifies another kind of concepts, which, he supposes, is exclusive to social-scientific disciplines. As examples of this third kind, he lists "economic exchange", "capitalism", "Christianity" (Weber 2012c: 131) or the "economic subject" (in the sense of *homo oeconomicus*) (Weber 1990: 30). Further examples are concepts formed by Weber himself (1968): "institution", "legal authority", "patrimonial domination", and many others. On the one hand, these concepts appear general, because one can seemingly subsume many exemplifications under them (Burger 1987: 122) — particular cases of economic exchange, particular historical forms of capitalism, etc. On the other hand, none of the particular exemplifications *completely* satisfy the criteria postulated by the concept: in each case of a market exchange, the circumstances and the motives of agents involved distinguish it from the "pure" exchange postulated by economic theory (which holds, for instance, that all agents are perfect utility-maximizers). From the point of view of the theory of concepts to which Weber subscribed, these cannot be general concepts of the usual kind, but neither are they individual concepts. Weber calls them "ideal types".

Similarly to other kinds of concepts, ITs serve to order empirical reality. They are also formed by abstraction, albeit a specific one. It entails a "*theoretical* accentuation of certain elements of reality" (Weber 2012c: 124), a "one-sided *accentuation* of *one* or *a number of* viewpoints" and the "synthesis of a great many diffuse and discrete *individual* phenomena (more present in one place, fewer in another, and occasionally completely absent)" into "an internally consistent *mental* image" (Weber 2012c: 125). Such concepts have no particular exemplifications in empirical reality; they are "unrealistic" (Weber 1968: 21) and only "approximate [reality] more or less closely" (Weber 2012b: 331).

Weber viewed ITs as specific to the social sciences. This is due to the complexity of the subject matter of these disciplines,[4] which is ultimately a consequence of human

[4] "For example, the same historical phenomenon may be in one aspect feudal, in another patrimonial, in another bureaucratic, and in still another charismatic. In order to give a precise meaning to these terms, it is necessary for the sociologist to formulate pure ideal types of the corresponding forms of action" (Weber 1968: 20).

intentionality (Burger 1987: 116). A given kind of human action — say, economic exchange — is always motivated by a heterogeneous set of reasons, goals, and values. Therefore, the generalizing abstraction is unable to form a universal concept of it which would apply to all the cases. The individualizing abstraction, on the other hand, cannot cover more than a single particular case. An ideal type should enable one to capture the forms that human action *would* take *if* it *were* motivated exclusively by particular and explicitly formulated reasons, goals, or values. Which of these will be the focus of a particular IT is determined — just as in the case of the individualizing abstraction — by the criterion of value relation.[5] For Weber, a specific feature of IT as a "concept" is, therefore, not only that it is unrealistic, but also that it concerns human action and its "meaning" — in the sense of the motives ascribed to a given action by the agent or by others. Weber realized that the natural sciences use concepts such as "point mass" or "absolutely empty space", and he evidently saw them as analogous in some sense to ITs (cf. e.g. Weber 1990: 30; 1968: 20) but only spoke of ITs with regard to "meaningful action", i.e. in the context of social science.

He viewed the function of these concepts as twofold — expository and heuristic (e.g. Weber 2012e: 74; 2012c: 125; 1968: 21). As regards the former, ITs allow one to formulate unequivocal descriptions and classifications of social phenomena, albeit at the cost of "abstractness" (Weber 1968: 22). In other words, an IT "*is not* a *depiction* of reality, but it seeks to provide [a scientific] account with unambiguous means of expression" (Weber 2012c: 125). As for the latter, an IT serves "to »compare« empirical reality with it, to establish how it contrasts with reality, how far removed or relatively close it is to [reality]" (Weber 2012b: 331), as well as to "guide the formulation of hypotheses" (Weber 2012c: 125) which would explain *why* observed human action differs from the ideal-typical one. ITs thus function as a key instrument in the formulation of causal explanations in the social sciences: "in order to grasp the real causal interconnections, we *construct unreal ones*" (Weber 2012a: 182).

I shall come back to further details of the "construction" of ITs and their use as heuristic instruments in section 2. The material covered so far will suffice to assess the adequacy of the two reconstructions of Weber's conception to which I now turn.

1.1. Nowakowa — the ideal type as the extreme element of a classification

Izabella Nowakowa (2007) sets out to compare Weber's conception of ITs with Hegelian idealization as formalized in the idealizational philosophy of science of the Poznań School. An IT, she argues, can be viewed as a "possible object" resulting from a specific "deformation" of a real object — namely, from the process of

[5] "Just as there are therefore different »viewpoints« from which we can regard these phenomena as significant for us, so one may rely on entirely different principles for the selection of those relationships that are to be included in an ideal type" (Weber 2012c: 125).

a counterfactual ascription of a minimal value to a certain property (properties) of the real object (Nowakowa 2007: 164). Following earlier classifications of deformational procedures, she terms this operation "negative potentialization". Since Nowakowa views idealization, in line with the Poznań tradition, as a combination of two kinds of deformation procedures ("reduction", i.e. the elimination of properties and "negative potentialization"), she concludes that the procedure involved in the construction of Weberian ITs is simply a special case of idealization (Nowakowa 2007: 164).

On Nowakowa's account, an IT is the extreme member of a classification. On an ascending scale of objects based on the value of a given property, the element S_0 is an IT if it is empty, i.e. if there are no real objects that satisfy the given (minimal, e.g. zero) value of the property (Nowakowa 2007: 160). On the other hand, the elements $S_1, \ldots, S_n$ of the classification are "real types" which are exemplified by real objects. Thus the function of ITs, on Nowakowa's account, seems to consist mainly in the systematization of phenomena: the IT serves as a standard with which real types are compared and thus classified.

Before turning to a criticism of this account, it should be noted that Nowakowa acknowledges the "purely conceptual character" of her conclusions, as well as the fact that her explication is based on previous reconstructions, and not on the original material by Weber (Nowakowa 2007: 159, 164). Still, there is some evidence in Weber's writings in favour of her approach. For example, he characterizes IT as a "*limiting* concept against which reality is *measured* — with which it is *compared*" (Weber 2012c: 127). However, there are two reasons why Nowakowa's account is lacking.

First, it does not address the question of the heuristic role of ITs in explanation. Attempts to explicate IT in Nowakowa's manner, i.e. as a "limiting concept" in the sense of the extreme element of a classification, have a long history. However, as was pointed out by Hans Albert,

> if we examine the use of ideal types in *Max Weber*, it seems not to be in tune with this analysis [of IT as the extreme element] […]. By means of ideal-typical constructions, Weber evidently wanted to provide a foundation for the explanation of social reality (Albert 1967: 57; for similar conclusions, cf. Janoska-Bendl 1965: 78, Burger 1987: 158).

Nowakowa justifies her approach by referring to the "reconstruction proposed by Hempel and Oppenheim as an explication of the Weberian tradition" (Nowakowa 2007: 159). Clearly, the implicit reference here is to their ground-breaking study *Der Typusbegriff im Lichte der Neuen Logik* (Hempel, Oppenheim 1936). But neither that work nor its later development in (Hempel 1960) addresses ITs. The subject matter of these contributions are typologies and types as found, for example, in psychological theories of personality, where they indeed fulfil a *systematizing* function. Still, Hempel *did* in fact analyse Weber's ITs and their *explanatory* role in his later work (1965), yet he explicated them *not* as comparative concepts, but as theories.

Second, Nowakowa's reduction of the deformational procedure used in constructing ITs to "negative potentialization" is untenable. In an unpublished manuscript of lectures in economics, Weber analyses the method by which economic theory introduces the "*constructed* »economic subject«". Economics:

> (a) treats as *absent — ignores* all such motives influencing the empirical Man which are not specifically *economic*, i.e. do not originate in the satisfaction of material needs; (b) *pretends* the existence of certain qualities that the empirical Man does *not* have or has only in an imperfect way […]. The arguments of economics relate to an *unrealistic* Man, analogous to the ideal figure in mathematics (Weber 1990: 30).

Since Weber viewed economics as a paradigmatic case of a discipline employing ITs,[6] it is safe to assume that the passage describes the construction of an IT. By confronting it with Nowakowa's reconstruction, one can see that she does not take into account the difference between the "ignoring" of properties (i.e. elimination or reduction) and the explicit ascription of a minimal value to properties (i.e. negative potentialization). Moreover, she completely disregards the case (b), that is, the ascription of properties that the original object (in this case, the "empirical Man") lacks. In the Poznań vocabulary, this would be labelled "transcendentalization". Hence, Nowakowa's conclusion that Weber's procedure is merely a special case of idealization (insofar as it is taken to mean a combination of reduction and negative potentialization) is unwarranted.

1.2. Nowak — ideal types as analytic statements

In his classic account of the idealizational philosophy of science, Leszek Nowak (1980) also briefly discusses Weber's ITs. He proposes to construe them as statements of the form "If $A_1(x) \wedge \ldots \wedge A_m(x)$, then $B(x)$". The properties involved may or may not be exemplified by some real object. Since B refers to a property that is satisfied *by definition* by any object with the properties $A_1, \ldots, A_m$, such ideal-typical statements are, according to him, analytic (Nowak 1980: 48-49).

The role played by an IT in explanation depends, according to Nowak, on whether it "deviates from reality" or not (Nowak 1980: 49). This question can be answered by testing the hypothesis about the applicability of the ideal-typical statement to a given object, i.e. a hypothesis of the form $A_1(a) \wedge \ldots \wedge A_m(a)$. If the test is positive, an explanation can be formulated based on the following scheme (Nowak 1980: 49):

$$\frac{(\forall x)\,[(A_1(x) \wedge \ldots \wedge A_m(x)) \rightarrow B(x)] \quad A_1(a) \wedge \ldots \wedge A_m(a)}{B(a)}$$

[6] "Economic theory reveals itself as a sum of »ideal-typical« concepts" (Weber 2012g: 249).

The fact that a has the property B is explained by referring to the fact that it has the properties $A_1, \ldots, A_m$ and to the IT-statement.

If the object under investigation does not have the property B, then the IT-statement, according to Nowak, serves as a heuristic tool. It prompts the researcher to look for a property C which prevents the object from having one of the properties $A_1, \ldots, A_m$ (and therefore also the property B). Eventually, explanation takes the form (Nowak 1980: 50):

$$\frac{(\forall x)\,[C(x) \rightarrow \neg A_i(x)] \quad C(a)}{\neg A_i(a)}$$

An important feature of Nowak's reconstruction is that he emphasizes the relation between ITs and explanation and considers their heuristic function. However, the solution is not without its problems. To make them explicit, a closer look at some of the details is necessary.

Since Nowak does not provide an illustration of the way in which ITs work in practice, I will construct one from the following Weberian example, which is also referred to by Nowak:

> One can, for example, arrive at the theoretical conclusion that in a society which is organized on *strict* "handicraft" principles, the only source of capital accumulation can be ground rent. From this perhaps, one can — for the correctness of the construct is not in question here — construct a pure ideal picture of the shift, conditioned by certain specific factors — e.g., limited land, increasing population […] — from a handicraft to a capitalist economic organization. Whether the empirical-historical course of development was actually identical with the constructed one, can be investigated only by using this construct as a heuristic device for the comparison of the ideal type and the "facts". If the ideal type were "correctly" constructed and the actual course of events *did not* correspond to that predicted by the ideal type, the hypothesis that medieval society was *not* in certain respects a *strictly* "handicraft" type of society would be proved. And if the ideal type were constructed in a heuristically "ideal" way — whether and in what way this could occur in our example will be entirely disregarded here — it will guide the investigation into a path leading to a more precise understanding of the non-handicraft components of medieval society in the peculiar characteristics and their historical significance. *If* it leads to this result, it fulfils its logical purpose, even though, in doing so, it demonstrates its divergence from reality (quoted in Nowak 1980: 48, my omission).

In this case, it seems that the antecedent of the IT-statement would refer to the properties "being organized on strict handicraft principles" (A_1), "having limited land" (A_2), "having increasing population" (A_3), while the consequent would refer to the property "to shift to a capitalist economic organization" (B). Investigating the emergence of a capitalist economy in a given society, the researcher would confront data on its preceding form of economic organization with the IT-statement. Should it appear that the society satisfied the antecedent, she could (supposing that the IT is "»correctly« constructed") explain the emergence of a capitalist economy as the re-

sult of the presence of the properties A_1, A_2, A_3. Weber does not consider this case in the example, though, and assumes that the actual course of events did not correspond to the ideal-typical one. This discrepancy means, in Nowak's terms, that the society under investigation does not have the property B (it differs in certain aspects from the constructed image of a capitalist economy), and therefore also lacks at least one of the properties A_1-A_3. Provided that the presence of the properties A_2 and A_3 can be reliably and independently confirmed, one may infer that the society lacked the property A_1, i.e. it was not a society organized on strict handicraft principles. Further investigation will thus attempt to identify the specific circumstances (C) due to which the economy of the society a differed from a pure handicraft economy, and ultimately put forward an explanation based on Nowak's second scheme.

Let me now turn to the problems with Nowak's reconstruction. First of all, it is not clear why he regards IT-statements as analytic. Let us stick to the above example and reconstruct the statement as "If the economy of a certain society is organized on strict handicraft principles and this society has limited land, and…, then the economy of this society will transform to a capitalist one". It does not seem that we are dealing with an analytic statement here — not even analytic relative to the "theoretical conclusion" with which Weber introduces the example. But let us disregard this particular statement and turn to a less problematic example. Assuming the standard operational definition of the property "being an acid", the statement "In any liquid (A_1) which is an acid (A_2) a litmus paper will turn red (B)" is analytic and qualifies for an IT-statement according to Nowak's criteria. The fact that after submerging a piece of litmus paper in the liquid b, the paper turned red, could then be explained by referring to b's being an acid and to the IT-statement. By contrast, if the litmus paper fails to turn red in b, one can infer that it is not an acid. One can then try to confirm the presence of a property C ("being a sample of tap water") incompatible with A_2. Finally, one can formulate the explanation using the second scheme provided by Nowak:

$(\forall x)\,[C(x) \rightarrow \neg A_2(x)]$	Tap water is not an acid.
$C(b)$	b is a sample of tap water.
$\neg A_2(b)$	b is not an acid.

The point of this exercise is to show that if IT-statements were analytic, they would be of little use to empirical social science whose goal is the causal explanation of human action. In the first case, the "explanation" is purely explicative. In the second case, the IT-statement does not appear in the explanation (as acknowledged by Nowak), and its heuristic role is highly questionable. If it is a matter of *definition* that any object that has the properties A_1 and A_2 also has the property B, then the inference from the absence of B to the absence of A_1 or A_2 can hardly be viewed as a significant discovery. Furthermore, Nowak does not pose the question of how the IT-statement could assist in the identification of the properties (e.g. C) which make the real object diverge from the IT.

However, the problems do not end here. Nowak justifies the analyticity of IT-statements by the fact that they "cannot be tested at all" (1980: 48). At the same time, he admits the possibility that an IT-statement "agrees with the investigated phenomenon" or "does not correspond to the actual phenomenon" (Nowak 1980: 48). It is not clear how an *analytic* statement, lacking empirical content, could be construed as corresponding, or not, to the facts. If a statement cannot be tested at all, one should not even be able to meaningfully raise the question of such correspondence.

Further difficulties concern the very concept of IT. Nowak does not specify what kind of object an IT is. Instead, he prefers the terms "ideal-typical concept" and "ideal-typical statement". The former is a concept that "denotes" an IT (Nowak 1980: 41), the latter a statement which "refers to" an IT (Nowak 1980: 48). In order to explicate the concept of IT, Nowak quotes a short passage from Weber's *Objectivity*, which, however, does not address the question of what an IT *is*.[7] Therefore, the nature of the procedures used in the construction of ITs remains undisclosed.

In a later text, Nowak seems to have revised his original views in the same direction as the one pursued by Nowakowa:

> *The neo-Weberian paradigm*. Idealization is basically a method of constructing scientific notions. Having a certain typology in mind, one may identify its extreme member. If the member is an empty set, it is termed an ideal type and the notion attached to it is labelled idealization […]. The source of this approach lies in Max Weber's methodology. In modern philosophy of science it is Hempel's conception that is an explication of Weberian ideas (Nowak: 2000: 1).

Here, Nowak explicitly refers to (Hempel, Oppenheim 1936) and (Hempel 1960) — which, as mentioned above, are not concerned with Weber's ITs at all.

To summarize, neither of the accounts discussed provides an adequate description of the methods used in the construction of ITs or a satisfactory reconstruction of their use in explaining social phenomena that would be free of conceptual problems. In the next section, I propose an account of Weber's conception that encompasses both of these aspects.

2. ABSTRACTION, IDEALIZATION, AND IDEAL TYPES

In this section, I first show that ITs can be viewed as abstract (i.e. non-spatiotemporal) objects which result from the application of the methods of abstrac-

[7] "An ideal type is formed by the one-sided *accentuation* of one or more points of view and by synthesis of a great many diffuse, discrete, more or less present and occasionally absent *concrete individual* phenomena, which are arranged according to those one-sidedly emphasised viewpoints into a unified *analytical* construct. In its conceptual purity, this mental construct cannot be found empirically anywhere in reality. It is a *Utopia*" (quoted in Nowak 1980: 41). It should be noted that the earlier English translation cited by Nowak has "*analytical* construct" in place of the original *Gedankenbild*, which *prima facie* favours Nowak's interpretation of ITs as analytic statements. In the more recent translation, the more fitting "*mental* image" is used (Weber 2012c: 160).

tion and idealization. These are non-empirical methods which are routinely used in both the natural and social sciences. Thus, I argue that the procedures employed in the construction of ITs are not principally different from those used in the natural sciences when introducing ideal objects like the "simple pendulum". I then go on to reconstruct the method involved in the heuristic use of ITs in causally explaining human action. The so-called ideal-typical method is thus a complex procedure consisting of two methods: the construction of an IT and its heuristic use.[8] In reconstructing both methods, I draw on a model of method as a sequence of instructions, as well as on an explication of the methods of abstraction and idealization within that model (Bielik et al. 2014a, b, c, d and Halas 2015).

2.1. The "construction" of ideal types

In section 1, we saw Weber describe the process of the construction of ITs as a "*theoretical* accentuation" in which properties of real (spatiotemporal) objects are treated "as *absent*", while the existence of other properties is pretended. Elsewhere, he characterized this procedure as a "process of *abstraction*" which results in an "imaginary picture" or a "*theoretical* construct" (Weber 2012a: 175). Weber also emphasized that an IT is "put together out of the individual parts which are taken from historical reality" (Weber 1992: 13) — in other words, that its source material is "immediately given" (Weber 2012a: 175). From this, we can draw two conclusions relevant to the explication of the method of constructing ITs. First, if a method is generally understood as a sequence of instructions which lead one to transform a certain input state (object) to an output state (object),[9] then the construction of ITs consists in the transformation of a certain veridical representation of "historical reality" (e.g. a representation of the "empirical Man") into an "imaginary picture" (e.g. the "economic subject") that distorts, in a sense, the original veridical representation.

Second, two kinds of distorting operations are involved in this transformation: the ignoring of some of the properties of the input object and the counterfactual specification of "new" properties which are not exemplified by the input object. Following (Jones 2005), I call these operations "abstraction" and "idealization", respectively. In (Halas 2015) I have proposed an explication of these methods in terms of sequences of instructions. Both methods take an abstract object (i.e. a non-spatiotemporal object) as their input and produce a different abstract object as the output. The input object may or may not be a (veridical) representation of some spatiotemporal object; but it may also itself be the product of previous abstraction and/or idealization. I take the method of abstraction to consist of the following steps:

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[8] I set aside the expository function of ITs, as it was not the main focus of Weber's writings either.

[9] For an early example of a theory of method based on this view, cf. Materna 1966.

1. Identify the input object o!
2. Identify the set of properties A encoded[10] by o which are relevant with respect to the present cognitive objectives!
3. Define the output object o' which encodes properties from the set A!
4. Declare o' an abstractum based on o!

By contrast, the method of idealization consists of the following instructions:

1. Identify the input object o!
2. Identify the set of properties A encoded by o!
3. Identify the set of properties $A_n \subset A$ encoded by o which do not conform to the present cognitive objectives!
4. Identify the set of properties A_i which conform to the present cognitive objectives!
5. Define the output object o' which encodes the properties from the set $A' = (A - A_n) \cup A_i$!
6. Declare o' an ideal object based on o!

Hence, an abstractum does not encode some of the properties encoded by the input object, while an ideal object encodes some properties not encoded by the input object. In both cases, the selection of properties encoded by the output object is governed by the wider cognitive objectives in pursuit of which the input object is being transformed.

To illustrate the proposed understanding of both methods, let us consider a typical ideal object of physics, the "point mass". Its introduction is motivated by certain theoretical goals and takes place against the background of pre-existing knowledge. The procedure can be reconstructed as a transformation of an input object, e.g. a representation of a generic physical body (the representation itself being an abstract object, albeit one that represents particular spatiotemporal objects), into an output object. The transformation proceeds in two sequential steps. In the first step, all properties except for "having mass", "having (nonzero) volume" and "having position" are abstracted from. In the second step, the property "having nonzero volume" is replaced with "having zero volume". The resulting ideal object only encodes the properties "having mass", "having zero volume" and "having position".

2.1.1. COGNITIVE OBJECTIVES — THREE CRITERIA

The construction of an IT can be understood as a procedure that combines abstraction and idealization and is guided by particular cognitive objectives. The specificities of these objectives — which particular properties will be abstracted from, which properties will be idealized — will vary from case to case. However, one can identify in Weber's conception some general guidelines which he viewed as imperative. According to Weber, each IT must satisfy the following three criteria:

[10] On the distinction between exemplification and encoding, see Zalta 1988: 15 ff.

1. the criterion of "value relation",
2. the criterion of "adequacy on the level of meaning" ("meaning-adequacy"),
3. the criterion of "causal adequacy".

Weber's first criterion was mentioned in section 1. In his view, it applies universally to concept formation in social science. With regard to the abstraction and idealization involved in the construction of an IT, this criterion leads to the selection of properties that are "value relevant", i.e. those which, in the case of abstraction, are *not* ignored, and those which, in the case of idealization, are counterfactually ascribed to the resulting object. However, according to Weber, there is no single and conclusive test of value relevance. As we have seen, Weber permits the existence of different ITs constructed from the *same* source material on the background of *different* value-viewpoints. Some critics have therefore accused Weber of "voluntarism", "subjectivism", or "decisionism" (cf. e.g. Weiss 1981 — on the Marxist-Leninist reception of Weber). But although Weber allowed for some degree of freedom in the *construction* of ITs, this was not the case in their *heuristic use*. Only some of the ITs that can be constructed on the basis of different values will prove useful:

> And, indeed, it is never possible to determine in advance *whether* [such constructive efforts] are mere fantasies or whether they constitute scientifically fruitful concept formation. Here, too, the only standard is whether [the ideal type] is useful for acquiring knowledge of concrete cultural phenomena — their context, their causal determination and their *significance*. Consequently, the construction of abstract ideal types can only be considered a *tool*, never an end [in itself] (Weber 2012c: 126).

The *criterion of value relation* can ultimately be reduced to the maxim that properties encoded by an IT are always determined by the wider theoretical background against which it is constructed. This background sets apart certain aspects of the investigated phenomenon as relevant (recall the example of World War I in section 1). Some ITs may prove heuristically fruitless, while others will survive the test and be preserved as productive *with regard to certain objectives*.

As mentioned above, Weber viewed ITs as concerned with human action, which, according to him, was the proper subject-matter of social science. All the examples of ITs he discusses "depict" either (a) types of action (e.g. "instrumentally rational action"), (b) systems of beliefs which motivate some specific kind of action ("Christianity"), (c) kinds of agents, groups of agents, and systems which act or in which action takes place based on specific motives ("organization", "feudalism"), or (d) kinds of social processes which result from specifically motivated action ("economic exchange", "rationalization"). Accordingly, at least some of the properties encoded by ITs are intentional: they concern reasons, goals, or values which motivate human action, as well as dispositions to act on these motives in a specific way. An IT satisfies the *criterion of meaning-adequacy* if the motives that it encodes correspond to the dispositions it encodes.

Weber thought that the assessment of such correspondence relies on certain "*rules* of experience" (Weber 2012a: 181) which are based on antecedent observation of human action (Weber 1968: 10):

> The interpretation of a coherent course of conduct is "subjectively adequate" (or "adequate on the level of meaning") insofar as, according to our habitual modes of thought and feeling, its component parts taken in their mutual relation are recognized to constitute a "typical" complex of meaning (Weber 1968: 11).

These rules of experience have the character of common-sense knowledge (Burger 1987: 86) which enables one to judge a course of action as "understandable" given the motivational circumstances. This aspect of Weber's conception has led to severe criticism: subjective "understanding" can hardly be the basis for a scientific account of social reality and for its causal explanation. He is often associated with the position that the proper *method* of social science is subjective "understanding" (*Verstehen*) as opposed to causal explanation. Unfortunately, this is not the place to deal with the question of *Verstehen* in detail.[11] In any case, I believe that the demand for "understandability" need not be seen as an appeal to esoteric insight.[12] It can simply be taken to postulate that the means (or courses of action) selected for the IT should correspond to the selected ends (or motives) on the basis of a wider context of empirical knowledge ("rules of experience"), which may be of pre-scientific ("common sense") or scientific nature. In other words: if an IT encodes properties concerning motives and dispositions to act, the motives must correspond to the dispositions according to pre-existing "rules", and the motives themselves must not be in conflict.[13] This can be determined by inference from the rules of experience, insofar as they are known.

Weber balances out the criterion of meaning adequacy with the *criterion of causal adequacy*. Events, properties, etc. are mutually causally relevant if "there is a probability, which in the rare ideal case can be numerically stated, but is always in some sense calculable, that a given observable event (overt or subjective) will be followed or accompanied by another event" (Weber 1968: 11-12). In the construction of an IT, we rely — in the "ideal case" — not only on the knowledge of the usual and therefore "meaningful" relation between a motive and action, but also on nomological knowledge about their causal relation. Both criteria of adequacy must, according to Weber, be united.[14] If the criterion of meaning adequacy is not met, then

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[11] However, as Burger points out, Weber "radically opposed any such arguments which postulated a special *method* of understanding" (Burger 1987: 104).

[12] After all, Weber himself suggested to his contemporaries who emphasized the role of intuition: "He who yearns for seeing (*Schau*) should go to the cinema" (Weber 1992: xli). For Weber's critical remarks on psychologism in the social sciences, see Weber 1968: 18-19.

[13] This is how I interpret Weber's thesis that the IT should be an "internally consistent cosmos of imagined interrelations" (Weber 2012c: 124, emphasis omitted).

[14] "A correct causal interpretation of typical action means that the process which is claimed to be

the researcher is left with a mere "incomprehensible statistical probability" (Weber 1968: 12). If, on the other hand, causal adequacy is lacking, then the supposed relation between motives and courses of action is of a purely hypothetical nature (Weber 1968: 9, 11). Apparently, Weber did not consider the possibility of the two criteria running into conflict: that, for instance, the criterion of meaning adequacy would lead one to select motives and dispositions which are known to be statistically wholly unrelated. However, judging by the role ascribed by him to nomological knowledge in the social sciences,[15] he would probably view such a conflict as a major obstacle to the construction of the given type.

To sum up, the cognitive objectives which guide the methods of abstraction and idealization in the construction of ITs lead to the selection of properties which:

1. are deemed relevant relative to a pre-existing system of knowledge,
2. are intentional and mutually correspond according to available empirical knowledge,
3. occur together in pre-existing nomological statements (empirical laws).

Thus, the method of constructing ITs is a special case of the application of methods of abstraction and idealization. Its specificity lies in the peculiar nature of the cognitive objectives it presupposes, as summarized in the three points above. This specificity is a consequence of the nature of the subject-matter of the disciplines which, according to Weber, necessarily construct ITs.

2.1.2. IDEAL TYPES AS IDEAL OBJECTS

Using the conclusions above, I shall now reconstruct particular cases of ITs, reading Weber's characterizations and definitions of ITs as brief accounts of the process of their construction. Perhaps the simplest example, for which Weber also provides a basic analysis, is the "economic subject" of theoretical economics already cited above. According to Weber, the goal of economic science is first and foremost to grasp the most elementary phenomena in the economic life of a "fully developed" Man (Weber 1990: 29). With that purpose in mind, this discipline constructs an IT of an economic subject which lacks any motives that are not directly related to the satisfaction of material needs. At the same time, this subject is characterized by three properties which no "empirical Man" exemplifies: "α) perfect *insight* into the current *situation* — economic omniscience, β) exceptionless choice of the *means most suitable*

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typical is shown to be both adequately grasped on the level of meaning and at the same time the interpretation is to some degree causally adequate" (Weber 1968: 12). In a similar vein, in the earlier *Objectivity*: "What we are concerned with is the construction of relationships that our *imagination* considers to be sufficiently motivated and therefore »objectively possible«, and that seem *adequate* in the light of our nomological knowledge" (Weber 2012c: 126).

[15] "It is simply not possible […] to perform a *valid* [causal] imputation of some individual effect without making use of »nomological« knowledge — knowledge of the regularities of causal relationships" (Weber 2012c: 118).

to the given end — perfect »economizing«, γ) full use of one's own capacities in the services of acquiring goods — »relentless drive for acquisition«'' (Weber 1990: 30).

The construction of the IT of "economic man" summarized in the preceding paragraph can be interpreted as a procedure combining abstraction and idealization. The input object, which is a veridical representation of the "empirical Man" and thus encodes realistic properties, is first transformed into an abstractum which only encodes the properties relevant from the point of view of economics (Weber does not explicitly specify them) and selected on the basis of pre-existing cognitive objectives. Second, this abstractum is used as an input object in the method of idealization and transformed into an ideal object. The latter encodes the three properties mentioned above which are not exemplified by any spatiotemporal object. The selection of these properties is also based on antecedent cognitive objectives.

Other examples of ITs include the four types of social actions distinguished in (Weber 1968: 24 ff.). Instrumentally rational, value-rational, affectual, and traditional action are types in "conceptually pure form" "to which actual action is more or less closely approximated or, in much the more common case, which constitute its [i.e. actual action's] elements" (Weber 1968: 26). The introduction of all these types can be reconstructed as a procedure combining abstraction and idealization. Weber's comment on the second type is instructive:

> Examples of pure value-rational orientation would be the actions of persons who, regardless of possible cost to themselves, act to put into practice their convictions of what seems to them to be required by duty, honor, the pursuit of beauty, a religious call, personal loyalty, or the importance of some "cause" no matter in what it consists (Weber 1968: 25).

Thus the IT of value-rational action is an ideal object which encodes exclusively the kind of motives corresponding to the list above (briefly, "values") and the disposition to act always on such motives regardless of the consequences.

Elsewhere, Weber discusses the IT of a "democratic citizen polis", characterized thus:

> Army service and full citizen rights have been emancipated from landed property and there exists a tendency (which, of course, was never truly realized in the domain of qualifying for an office, not even in times of the most radical Athenian democracy) *to allow anyone capable of serving in the fleet to hold office*, that is: all citizens as such, regardless of differences in property (Weber 1924: 40, my translation and emphasis).

The "democratic citizen polis" is an ideal object which encodes (a) properties exemplified by some spatiotemporal object (trivially: e.g. *being a form of social organization*) and (b) properties exemplified by no such object. It is the result of transforming an abstract input object representing, for instance, Athenian democracy. Again, construction can be viewed as proceeding in two steps. First, an abstractum is formed which encodes only some of the properties of the input object. In the second step, this abstractum is transformed into an ideal object which encodes counterfactual properties (e.g. the one emphasized in the above passage).

Interestingly, ITs can be used in the construction of new ITs. For example, the IT of a "purposive association" (*Zweckverein*) relies on the IT of "instrumentally rational action" and allows one to introduce further ITs of "organs of the association", "purposive assets", and "coercive apparatus" (Weber 2012d: 285).

2.2. The heuristic function of ideal types

We have seen that the construction of ITs combines methods which in terms of their structure and nature do not principally differ from those used in the natural sciences. In this section, I focus on the methods in which previously constructed ITs are used. Here, too, I show that these are standard non-empirical methods which are not specific to the social sciences. As the summary of Weber's views in section 1 made clear, he saw ITs primarily as heuristic tools. This idea often takes the form of the claim that ITs are not an end in itself but rather a means; that they do not constitute knowledge in themselves but are mere devices for acquiring it (see e.g. Weber 2012f: 225; 2012c: 126; 2012b: 332). This is quite consistent with the usual approach to the methods of abstraction and idealization in philosophy of (empirical) science, where they are seen as instruments subordinate to the overarching goal of acquiring (empirical) knowledge, that is, as methods of constructing "useful fictions".

Weber viewed ITs as instrumental in the formulation of hypotheses about the (probable) causes of social phenomena:

> For example, a panic on the stock exchange can be most conveniently analysed by attempting to determine first what the course of action would have been if it had not been influenced by irrational affects; it is then possible to introduce the irrational components as accounting for the observed deviations from this hypothetical course (Weber 1968: 6).

The "panic on the stock exchange" is the event to be explained by referring to its cause, that is, by what Weber calls the "causal imputation" (Weber 2012e: 51) of this event to some other event (or, more precisely, to the actions and motives of some agent). In this case, the latter are the "irrational affects" influencing the actions of the agents on the stock market. Such imputation presupposes the *identification* of the relevant cause. According to Weber, this identification proceeds through *comparing* the factual situation with a hypothetical one in which agents act in a purely instrumentally rational way. I shall examine this example in more detail below, albeit — due to the parsimony in Weber's writing — at the cost of some conjectures.

The explanation that Weber proposes here is contrastive: "the events took the course *e* rather than *e*' due to the presence of the antecedent conditions *c* rather than *c*'".[16] To formulate such an explanation, a contrast must be available — in this case, the course of events expected in conditions of purely instrumentally rational action.

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[16] On contrastive explanation, see Lipton 1990; in the context of social sciences, cf. Ylikoski 2011.

However, the IT of an instrumentally rational agent does not, in itself, provide such a contrast. The heuristic use of IT in formulating explanation will therefore consist of two steps. I call the first "the study of IT" and the second "the contrastive explanation from IT".

In the first step, the aim is to determine the contrast: how an IT would "behave" in a certain more or less specific situation. The cognitive problems that can be solved by the study of IT are illustrated by the following questions: "Which means would an *instrumentally rational agent* choose if she had the means M_1, M_2, …, M_n at her disposal and pursued the end E_1?", "What steps could a *charismatic leader* take in a situation Z to maximize her influence?", "Which of the types of *religious ethics* G_1, …, G_m best corresponds to the *capitalistic orientation of profit-making*?" (all the ITs are taken from Weber 1968). Given that ITs are abstract objects without any spatio-temporal counterparts, these questions cannot be answered by empirical research.

As discussed above with regard to the criterion of causal adequacy, the basis for the construction of an IT is, among other things, some nomological knowledge — for example, knowledge about the disposition of human beings to act in a situation R_1 and its variants R_2, …, R_o in the way J_1 or its variants J_2, …, J_o. Based on this and other knowledge which constitutes the cognitive objectives, one transforms some input object into the output object. The resulting IT, e.g. that of an instrumentally rational agent i, encodes nothing but the selected motives and dispositions to act. It can thus be unambiguously determined that in the situation R_1, the agent i's course of action will be J_1. The further study of the IT, whose goal is to obtain a contrast suitable for inclusion in an explanation, is concerned with inferring how i would act in a modified situation R_1'. Schematically, the study of ITs takes the form:

$$R_1(i) \rightarrow J_1(i)$$

$$R_1'(i) \rightarrow ?$$

Here, based on the knowledge of a certain constellation of a situation and action, one asks what the action would be in the modified situation. This scheme corresponds to the procedure employed in thought experiments.[17] Whether this will be an "intuitive imaginary experiment" employing imagination and non-deductive inference, or a "theoretical imaginary experiment",[18] depends on the wider context of knowledge which forms the background for the construction and study of the IT. If a sufficiently rich theory is available, then the assessment of how an agent would act in a modified situation may be a question of a deductive inference from the theory and the auxiliary assumptions describing the modified situation.

Let us return to the panicking stock exchange. The researcher has established that in a situation S (e.g. the emergence of information about a decline in asset prices), a real agent a (in this case, perhaps an entire set of stock traders) decided to act in a

[17] The scheme draws on Picha's work (2011) focusing on the epistemology of thought experiments.

[18] On the distinction between the two kinds of imaginary (thought) experiment, see Hempel 1965.

way K (e.g. sale of assets, which led to a further decline in asset prices and an even more frantic selling). To proceed further, the researcher must first embed the IT of an instrumentally rational agent in such a situation. This is done, as shown above, by means of a thought experiment. Based on the knowledge that in some generic situation T the instrumentally rational agent i would act in the way L, it is inferred that in the stock exchange situation S the agent i would act in the way K':

$$T(i) \rightarrow L(i)$$

$$S(i) \rightarrow K'(i)$$

In this way, one obtains the contrast $S(i) \rightarrow K'(i)$ to the real-world course of action $S(a) \rightarrow K(a)$. The aim now is to show which properties (motives, beliefs, dispositions to act, etc.) led the real-world agent a to act in the way A.

At this juncture, the heuristic function of the IT comes to the fore. The properties A_1', …, A_r' encoded by the IT are known beforehand — from the process of constructing the type. The characteristics of the ideal-typical action K' were made clear by the thought experiment. At least some of the properties A_1', …, A_r' are known to be "causally adequate" with respect to the action K'. The aspects of the real-world course of action K are known from empirical evidence. The IT now leads the researcher to identify properties A_1, …, A_s of the real-world agent a which are not encoded by the IT and therefore could have been causally responsible for those aspects in which the real-world course of action K differs from the ideal-typical course of action K'. The identification of these properties, as well as their confirmation in a, are a matter of further investigation which may require gathering more empirical evidence. Here, the role of the IT lies in indicating which properties *could not have been* responsible for the course of action under investigation.[19] For simplicity, let us assume that it has been confirmed that the real-world agent a differs from the ideal-typical agent i only in that a lacks the property A_1' and has the property A_1. One can infer, then, that it was this property which caused the "deviation" of the real-world action from the ideal-typical one. An explanation can take the following form:

> (In the situation S) the course of action K took place, rather than K', because the agent a had the property A_1, rather than A_1'.

In the case of the stock exchange panic, A_1 would be the "irrational affect" responsible for the "deviation" from the purely instrumentally rational action.

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[19] The IT, in combination with other knowledge, may also lead the researcher to identify properties that are known to be incompatible with the properties encoded by the IT. Either way, Weber emphasized exactly this "negative" heuristic role of ITs: "The more sharply and precisely the ideal type has been constructed, thus *the more abstract and unrealistic in this sense it is*, *the better it is able to perform its functions* in formulating terminology, classifications, and hypotheses" (Weber 1968: 21, my emphasis).

The procedure leading up to the explanation does not principally differ from the well-known method of difference, one of "Mill's Canons of Induction": from the presence of a factor and an effect in one case, and the absence of that factor and that effect in another case, it is inferred that the factor is indeed the cause of the effect. Of course, in line with Weber's belief that ITs should serve in the formulation of *hypotheses*, the resulting explanation should be viewed as hypothetical, i.e. one that has to be confronted with other cases of similar courses of action in similar situations.

It is clear that the heuristic use of ITs is a complex method which includes other non-empirical methods (e.g. thought experiment, various kinds of inference, and explanation) and may include the gathering of supplementary evidence by means of empirical methods. Without claiming exhaustiveness, it can be schematically captured as follows:

1. Based on pre-existing knowledge of the situation *S* under investigation and the course of action *K*, identify a pertinent IT *i*!
2. By means of thought experiment, identify the ideal-typical course of action *K*' of the agent *i* in the situation *S*!
3. Identify the set of properties *C* in which the real-world course of action *K* of the real-world agent *a* differs from the ideal-typical course of action *K*'!
4. Identify the set of properties *A* of the real-world agent *a* in which *a* differs from the ideal-typical agent *i*, and which could therefore be responsible for the presence of properties from *C* in the real-world course of action *K*!
5. Formulate a contrastive explanation in which:
   (i) the explanandum refers to the specificities of the course of real-world action *K*, and the explanans refers to the properties from *A*; and in which:
   (ii) the contrast consists of the ideal-typical course of action *K*' and the relevant properties of the ideal-typical agent *i*!

It should be noted that "action" is understood here in a broad sense: it includes action performed by individual agents, but also wider social processes — while "agents" also include groups. In the reconstruction of other particular cases of the use of ITs, a modification of some of the above formulations would probably be necessary, depending on the nature of the situation under investigation and the IT used.[20]

The explanation formulated in instruction 5 is of a hypothetical nature. If it is not undermined by future evidence, the heuristic fruitfulness of the IT selected in in-

[20] The sequence of instructions sketched above could be used, for instance, to reconstruct the example of a "handicraft society" briefly discussed in the first section.

struction 1 will have been confirmed. Otherwise, the selected IT cannot be productively used in the given case, and another one is to be sought.

For Weber, this was not a reason to completely discard the former IT: "this does not exclude the possibility of using [that IT] in any other case" (Weber 2012e: 84). In this, he saw yet another feature peculiar to the social-scientific disciplines. A law of nature which only applies with exceptions is, for Weber, untenable, while an IT which only proves itself useful in a handful of cases has a secure place in social science. However, even if we disregard the difficulties with laws construed as "strictly universal" statements, this comparison does not seem too fair. Even the natural sciences are no strangers to using a multiplicity of "local" models with specific limitations (Weisberg 2007: 645-646), or even false ones — given that they are simple, computable, or predictively powerful (Bokulich 2011).

CONCLUSION

The relevant literature offers a host of characterizations of Weber's ITs: they are viewed as models (e.g. Janoska-Bendl 1965: 55, Burger 1987: 164, Lindbekk 1992: 290, Mommsen 1992: 131), images, hypotheses, or definitions (Hufnagel 1971: 223), but also as limiting concepts or theoretical systems. I propose to view the ideal-typical method as a combination of two methods: that of the construction of ITs and that of their heuristic use. The first of these is a non-empirical method whose structure and nature do not principally differ from the manifold applications of abstraction and idealization known in the natural sciences. The object resulting from the application of this method, i.e. a particular IT, is distinctive only in the sense that it is concerned with human action and its motives. This property is a consequence of the nature of the subject-matter and the cognitive goals of the social sciences.[21] In other respects, however, ITs are similar to ideal objects found in the natural sciences. The second, heuristic component of the ideal-typical method may include the application of empirical techniques in identifying the real-world agent's properties in instruction 4. But the procedures employed in the heuristic use of ITs do not principally differ from those routinely used in the natural sciences.

Of course, the methodological reconstruction sketched above does not answer the question of whether the social sciences *should* use the ideal-typical method, or whether they *actually* use it. Clearly, Weber's answer was in the affirmative on both counts. But insofar as that answer is correct, the social-scientific disciplines rely on a combination of methods which are also available to, and indeed common in, the natural sciences.

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[21] In a recent paper, Hilliard Aronovitch arrived at conclusions similar, in part, to mine: the main difference between the abstract objects of the natural sciences (like "absolute vacuum" or "frictionless surface") and the ITs consists in that the latter concern human agents (Aronovitch 2012: 361). Nevertheless, this difference should not be overstated: by the same token, we could also juxtapose the abstract objects of physics and *biology*.

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