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DISCUSSION NOTE

Conceptual Concretization

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Abstract: Leszek Nowak is rightly known as the pioneer of empirical concretization. As Giacomo Borbone notes, there is also a kind of conceptual concretization. This specific form of concept explication is illustrated by two transitions: from Bayesian conditionalization to Jeffrey conditionalization and from 'the straight rule' of learning from experience to Carnap's continuum of inductive methods. The paper closes with a schematic list of checkpoints for conceptual concretization in two rounds.

Keywords: Carnapian learning from experience; concept explication; concretization; Jeffrey conditionalization; idealization; Leszek Nowak; Poznań School of Methodology; schematic recipe for explication.

Let me begin with a characteristic anecdote with Leszek Nowak. My wife (Inge de Wilde) and I were around November 24, 1981, a couple of days the guest of Leszek and Izabella Nowak. Their hospitality in these hard times, just before martial law, was incredible. For one evening Leszek had invited a number of young philosophers. They showed up with a present

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for Leszek, which appeared to be the first copy of his new book that they had produced in some secret way. My wife knew at that moment that much of Polish that she immediately doubted whether the printed title, *Wolność i władza* (*Freedom and Power,* Nowak 1981), was the one Leszek had been talking about before, viz. *Własność i władza* (*Property and Power*)[1]. So she asked it in private to Leszek, upon which he said to her that he also had noticed this immediately, but that he didn't want to confront them so directly with their mistake.

Giacomo Borbone (2021) did an impressive job by presenting a systematic exposition of the main lines of thought of Leszek Nowak regarding idealization and concretization.

Surprisingly enough, he uses in his concluding section an expression, 'conceptual concretization', that does not occur in the rest of the book. As part of the concretization of an idealized law he summarizes, I quote: "concepts constituting conceptual concretizations of the idealizing concepts previously analyzed must be introduced" (Borbone, 2021, 166). Of course, in the book he has made clear what is here intended: e.g. idealized concepts, like 'ideal gas', have to be replaced by more realistic concepts. Related to this, I wrote in my contribution to The Courage of Doing Philosophy:

> In my view, Idealization and Concretization (henceforth I&C) is not only an important methodology in the empirical sciences (empirical I&C)[2], but also in philosophy, at least as far as philosophy is engaged in 'concept explication'. In concept explication one aims at the construction of a simple, precise and useful concept which is, in addition, similar to a given informal concept. According to the standard strategy of concept explication one tries to derive from the informal concept to be explicated and relevant empirical findings, if any, conditions of adequacy that the explicated concept will have to satisfy, and evident examples and counterexamples that the explicated concept has to include or

[1] The book was published in English by Reidel (Nowak 1983). I did the proofreading, since Leszek was interned at the time.

[2] Added note: I elaborated 'the paradigm example of [empirical idealization and] concretization', viz. the Law of Van der Waals, in (Kuipers 1985). An adapted version is available upon request: T.A.F.Kuipers@rug.nl

> exclude. As in the empirical case, it may be very useful to start with an idealized way of catching cases and conditions, in order to make it gradually more realistic. This I will call "conceptual I&C." Of course, conceptual I&C is useful not only for concept explication but also for concept formation in general. Moreover, explication may go further than the explication of informal concepts, it may also aim at the explication of intuitive judgments, i.e. intuitions, including their justification, demystification or even undermining. (Kuipers 2007a, 75-76)

So far for this quote. Let me stress that in case of conceptual concretization, the idealized initial explication of the concept reappears, as a rule, as an extreme special case of the concretized explication. In the rest of the 2007a-paper, I illustrated all this with a typical cluster of examples of concept and intuition explication, viz. confirmation, empirical progress, and (more) truthlikeness.[3] Here I will indicate some more examples of conceptual concretization, and close with a recipe for concept explication in general and conceptual concretization in particular.

Examples

Example 1: For the conceptual concretization of the concept of 'updating probabilities', I quote from (Kuipers 2007b, p. xv):

> Another example of [conceptual] concretization is the transition from simple or Bayesian conditionalization to 'Jeffrey conditionalization', taking into account that the posterior probability of a hypothesis may be based on evidence about which one is not certain. I just quote from the *Stanford Encyclopedia of Philosophy*: "Simple Conditioning: If a person with a 'prior' such that $0 < \mathbf{P}(E) < 1$ has a learning experience whose sole immediate effect is to raise her subjective probability for E to 1, then her post-learning 'posterior' for any proposition H should be $\mathbf{Q}(H) = \mathbf{P}_{\mathrm{E}}(H)$."

[3] One core example in this cluster, "truth approximation by concretization", was earlier more extensively elaborated in (Kuipers 1992).

> [Here $P_E(H)$ is standardly defined as $P(H\&E)/P(E)$ – T.A.F. K.]
> [...]
> Jeffrey Conditioning: If a person with a prior such that $0 < \mathbf{P}(E) < 1$ has a learning experience whose sole immediate effect is to change her subjective probability for E to q, then her post-learning posterior for any H should be $\mathbf{Q}(H) = q\mathbf{P}_E(H) + (1-q)\mathbf{P}_{\neg E}(H)$. Obviously, Jeffrey conditioning reduces to simple conditioning when $q = 1$." (Joyce 2003, 13–14) [That is, the latter is an extreme special case of the former - T.A.F. K.].

Example 2: in explicating the concept of 'learning from experience when sampling' one may start with the 'straight rule', that is, using the observed relative frequency (n_i/n) for estimating whether the next, the (n+1)-th, individual will have or will not have a certain property P_i. Here one neglects the prior knowledge that, say *k*, properties may be involved, and leaves after one trial only room for the observed property. Carnap (1952) in fact concretized the straight rule to the so-called continuum of inductive methods, leading to $(n_i+\lambda)/(n+\lambda)$, with a finite parameter λ, indicating a kind of inverse of the learning speed. Here the straight rule arises as an extreme special case: $\lambda=0$.

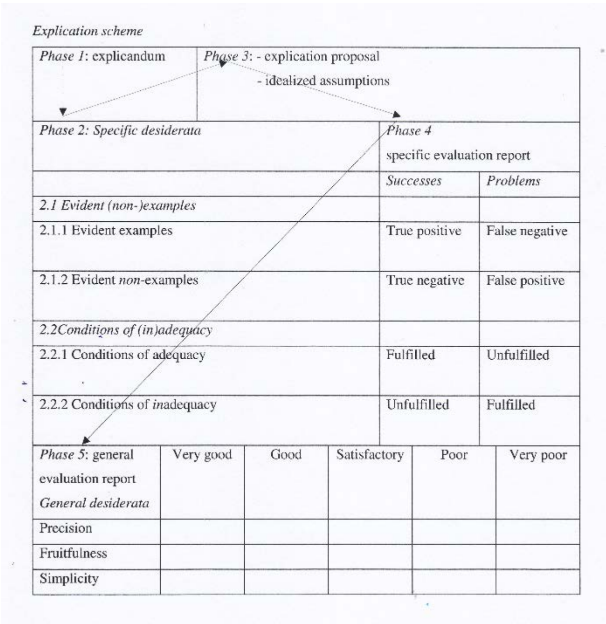
It is important to note that conceptual concretization may not only occur in the original, constructive phase of concept explication, of which Example 1 is a typical case, but also in the reconstructive phase for didactic purposes, exemplified by Example 2. In my own work it played almost always a role, either purely reconstructive or at first constructive, and later of course also reconstructive.

I conclude with a schematic recipe, in two rounds, for concept explication in general and for conceptual concretization in particular. The ordered checklist is phrased in constructive terms, but can be adapted for reconstructive purposes.

First Round, in 5 phases, see the explication scheme

1) Choose the explicandum, the concept to be explicated
2) Determine the specific desiderata in terms of evident (non-) examples and conditions of (in-)adequacy

3) Propose a first (idealized) explication (E_1), the *explicatum*, and try to make explicit as many as possible idealized assumptions, due to neglected relevant factors
4) Evaluate it in terms of successes and problems relative to the special desiderata
5) Evaluate it in terms of the general desiderata: precision, fruitfulness, simplicity


Explication scheme

Phase 1: explicandum	*Phase 3*: - explication proposal - idealized assumptions	
Phase 2: Specific desiderata	*Phase 4* specific evaluation report	
	Successes	*Problems*
2.1 Evident (non-)examples		
2.1.1 Evident examples	True positive	False negative
2.1.2 Evident *non*-examples	True negative	False positive
2.2Conditions of (in)adequacy		
2.2.1 Conditions of adequacy	Fulfilled	Unfulfilled
2.2.2 Conditions of *in*adequacy	Unfulfilled	Fulfilled

Phase 5: general evaluation report *General desiderata*	Very good	Good	Satisfactory	Poor	Very poor
Precision					
Fruitfulness					
Simplicity					

Second Round

6) Evaluate it in terms of unintended consequences (successes or problems)
7) Update the specific desiderata, in particular regarding unintended consequences and neglected factors, and update (the relative weight of) the general desiderata
8) Try to improve the first explication, notably by concretization, i.e. by taking a neglected factor into account

9) Evaluate the concretized explication (E_2) along the same lines as in the first round

10) a) Check by comparison whether progress has been made according to the following definition[4]:

E_2 is a *strictly better explication* of a concept than E_1 if and only if:

1. E_2 satisfies the updated general desiderata at least as well as E_1
2. E_1 and E_2 share all questioned (non-)examples and conditions of (in-)adequacy
3. E_2 includes (excludes) all evident (non-)examples included (excluded) by E_1
4. E_2 fulfils (does not fulfil) all conditions of (in-)adequacy (not) fulfilled by E_1
5. E_2 includes (excludes) some more (non-)evident examples and/or fulfils (does not fulfil) some more conditions of (in-adequacy)

b) Conclude that E_2 is a *successful concretization* of E_1 if and only if it is a strictly better explication than E_1 and if E_1 is an extreme special case of E_2 relative to the neglected factor(s).

The above checklist and the scheme turn out to be a useful tool for exercises in concept explication in general and conceptual concretization in particular.

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[4] Adapted version of the definition in (Kuipers 2007b, p. xiv).

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