METHODS OF CONCEPTUAL ANALYSIS

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This paper describes some of the methods usually grouped under the label of conceptual analysis. It delineates and compares three such methods: constructive method, detection method, and reductive conceptual analysis. For each of these three kinds of conceptual analysis, the problems which motivate its use are specified and the well-known instances of their application are discussed. Based on the general model of method as an ordered set of instructions, the three types of conceptual analysis differ in specifying the instructions involved in their use.

Keywords: Conceptual analysis – Conceptual theory – Language – Method

1. Introduction. Analysis is a term of many uses.¹ It is common in everyday speech and is often used by laypeople, but also by scientists and philosophers. The use of the term has a long history and hence an attempt to provide an exhaustive overview of its meaning would be limited. One of the forms of analysis is conceptual analysis (CA), the specifics of which are the subject of this paper. However, the semantic jungle behind the uses of CA is also quite thick. In modern philosophy, the rise of CA is connected with the names of G. E. Moore, Bertrand Russell, Gottlob Frege or Ludwig Wittgenstein These philosophers were certainly not the first to provide CA (see Earl 2005), nor were they the only ones to perform CA (see Beaney 2007), but they explicitly aimed to provide such analyses. The central role of CA in their work gave rise to an entire field in philosophy – the so-called analytic philosophy.

In this paper, my aim is to specify the features of CA in its various forms. However, I do not intend to make normative claims; at best, the following study of CA is descriptive and methodological.² My main claim is that there are several methods of CA and that all of them were formulated (or at least studied) under the label of CA. Below, I specify the differences between them and provide distilled, abstract models of these methods. I discuss three basic forms of CA: constructive, reductive and detection analysis.³

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² For a good overview of philosophical methods, see (Dally 2010).
³ In other words, I do not view linguistic analysis as a method of CA. While the aim of linguistic analysis is to provide insight into how a term is used within a specific field or domain, the aim of conceptual analysis is to examine the place of a concept in the conceptual network of a language or a theory. For a methodological dissection of linguistic analysis, see (Nuopponen 2010a, 2010b).
2. A model of method. In the following, I presuppose the model of method developed by Bielik et al. in (Bielik et al. 2014a, b, c, d), which views method as a set of instructions that lead to a specific goal. On the basis of this model, any method which leads to a scientifically relevant goal can be considered scientific. Typically, the use of a method is motivated by some kind of a problem formulated on the basis of a certain theoretical and factual background. This background is subject to change in the application of the method – i.e., it is modified whenever new theoretical or factual knowledge is gained by following the instructions of the given method.

Generally speaking, a problem is a question to which no ready-made answer is found in the background. The application of a method should transform the background so that it contains that answer, making the problem a non-problem. Proper modeling of this change of knowledge apparently presupposes the distinction between explicit and implicit knowledge.

3. The methods of CA. There are various kinds of problems solvable by CA. In the following, I discuss three different methods of CA. All of them aim at gaining better knowledge of the language we use. Thus stated, this objective seems vague. What does acquiring knowledge of a language mean? Should not every competent speaker already know her language? But that requirement seems to be too strong from an epistemic point of view (for discussions, see, e.g., Chalmers 2004 and Jackson 2013). A person can be a competent speaker without knowing all of its parts or having a complete correct theory of that language.

My aim here is to specify some of the methods of CA. Following the general model of method, in order to specify a method, one should provide a set of instructions and their ordering. In general, the granularity of any model is governed by the needs of the modeller. For my purposes, the three methods of CA need to be specified in such a degree of detail that displays the differences between them. For each of the three methods, I discuss the kinds of problems in which they are used, as well as the respective kinds of backgrounds. I shall not formalize the proposed methods into graphs, although the general model of method I use allows this. Instead, I shall simply state the set of instructions using ordinary language.

In the next three subsections, I proceed using the following template. First, I specify the kind of problem motivating the application of the given form of CA and discuss a well-known piece of philosophical research dealing with an instance of that kind. I then provide a model of the respective method of CA as an ordered set of instructions.

3.1 Constructive analysis. The problem motivating constructive analysis is the lack of an explicit relation among terms or concepts of a language within our conceptual the-

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4 For another example of the application of this model, see (Halas 2015).
5 For a study of the difference between the explicit and the implicit use of terms see, e.g., (Glavaničová 2015).
ory of that language. Constructive analysis aims to broaden our conceptual theory, either by postulating a new relation or stating that some already known relation holds among previously unrelated parts of the language. Constructive analysis thus enables one to introduce new terms or concepts which were lacking in the initial explicit conceptual theory. Clearly, certain definitions (namely, prescriptive ones) will surely be a part of constructive analysis; another example is explication.

A correct constructive analysis should be based on the initial explicit conceptual theory. I view a constructive analysis as correct if the resulting change in the conceptual theory leaves the relations of the initial theory intact. In other words, the new conceptual theory which results from a correct constructive analysis has the initial conceptual theory as its subpart. A constructive analysis should always be correct. A constructive analysis is coherent if the change of the conceptual theory is made using material already present in the initial conceptual theory. Therefore, a coherent constructive analysis either does not postulate any new concepts or terms in the theory, or it does not postulate a new relation. A constructive analysis need not always be coherent. To sum up, a correct analysis is enabled by the relations within the initial conceptual theory, while a coherent analysis is done within the limits of a correct analysis.

The enrichment of the initial conceptual theory can be based on present intuitions or on the discovery of certain relations which hold implicitly in it. For example, there could be an implicit relation among terms or concepts which is unknown to the speakers: the speaker may be unaware of the fact that the relation of entailment holds among some propositions, although she may understand those propositions perfectly well.

Can there be an incorrect constructive analysis? It would be an enrichment of the old conceptual theory which does not respect the initial conceptual theory. For example, let us presuppose that a definiendum and its definiens should be equivalent. Now, assume a conceptual network with a relation of equivalence among some of its terms. Here, a constructive analysis, if it is to be correct, must not introduce a relation of defining between terms that are not equivalent, for it would not respect the relations of the initial conceptual theory.

3.1.1 Case study: Russell. Constructive analysis explicitly modifies our conceptual theory of language by stipulating new relations which were not explicit before. One of the best known and widely discussed examples of such practice is Russell’s On Denoting (Russell 1905). According to Soames, this paper laid the foundations of modern-era analytic philosophy (Soames 2003, 127). In it, Russell proposes a theory of the meaning of propositions containing denoting terms. He famously proposes the theory of definite descriptions, i.e., of denoting terms containing the definite article as the main quantifier (such as the present king of France, the centre of our solar system, etc.).

I shall not discuss the correctness of this theory, for my aim here is methodological. Russell proposes a new theory according to which definite descriptions do not have a meaning of their own. This can be viewed as stating a constraint on the conceptual theory of language. According to that theory, language does not contain such denoting terms as
self-contained meaningful language terms, although it may contain such denoting terms as parts of complex terms. The meaning of these terms is then specified in a well-known way. Russell’s analysis does not enrich the initial conceptual theory with a new concept. Rather, it specifies a whole new relation which, according to Russell’s theory, exists in the language.

It is important to note how Russell presents his theory. First, he specifies the general background: “Thus a phrase is denoting solely in virtue of its form. We may distinguish three cases: (1) A phrase may be denoting, and yet not denote anything; … (2) A phrase may denote one definite object; … (3) A phrase may denote ambiguously; …” (Russell 1905, 479)

He then formulates the problem: “The interpretation of such phrases is a matter of considerable difficulty; indeed it is very hard to frame any theory not susceptible to formal refutation” (Russell 1905, 479). He proceeds by stating a simple theory for less problematic denoting terms (a, no, some).

Up to this point, Russell can still be seen as merely stating the background for the important move that comes next: the formulation of the theory of definite descriptions. From the systematic point of view, constructive analysis could end here. But Russell continues by comparing his theory of definite descriptions with other theories. He does so by stating three problems and comparing how well-equipped each of the theories is to resolve these problems.

3.1.2 A model of constructive analysis. Using the example and the characterization of constructive conceptual analysis above, one can now specify the method as an ordered set of instructions:

1. Specify the initial conceptual background $CB$!
2. Formulate the conceptual problem $P$!
3. State the new conceptual relation $R$!
4. Formulate tests $T$ of the conceptual relation $R$ within $CB$!
5. Elaborate the new relation $R$ by tests $T$ respecting $CB$!
6. If the relation $R$ succeeds in tests, declare it a part of $CB$!
The above set of instructions may seem simple. However, that impression merely indicates that the method of constructive CA is indeed a complex method—i.e., one which has other methods as its parts. Instruction 3 really is a placeholder for some such method, for example, the method of definition or explication. We can therefore specify the difference between constructive CA and the method of defining. In at least some forms of the method of defining⁶ we examine our conceptual system and state the relation between the definiendum and the definens. In constructive CA, the method of defining is used in a wider context, in order to solve a specific kind of problem, and it is tested on test cases.

### 3.2 Detection analysis

It is common practice in philosophy to question a declaration that a certain relation holds among concepts of a given language. As Williamson put it, “‘Philosophical questions are more conceptual in nature than those of other disciplines’: that can easily pass for a statement of the obvious” (Williamson 2007, 48).

In the following, I differentiate between the explicit and the implicit conceptual theory of a language. I do not presume that rational agents know all the logical consequences of their explicit knowledge.⁷ This opens up the plane for many questions and, incidentally, is also one way of dealing with the Paradox of Analysis (see, e.g., Fumerton 1983 and Ackermann 1992). For example, one can ask whether some terms are equivalent if we consider some other terms equivalent. This kind of reasoning is common in solving conceptual or mathematical equations (Eagle 2006). Usually, we have some knowledge about relations among terms at our disposal, which can be used, e.g., in substitutions when solving equations.

When doing philosophy, one can proceed in a similar way. Using our knowledge, we question the existence of implicit conceptual facts. Simply put, the problem for detection analysis is whether some conceptual relation exists within our conceptual network. When using this method, we ask neither about things we already know, nor about the existence of explicit relations. We ask whether—given our explicit conceptual theory—a given relation could hold implicitly.

The difference between constructive analysis and detection analysis is in the role of conceptual theory in the method. As we have seen above, constructive analysis results in a change of our explicit conceptual theory. In detection analysis, the explicit conceptual theory is studied, but not modified. However, the results of detection analysis may, in a next step, motivate constructive analysis. For example, we may discover that our conceptual network contains two regions of equivalent terms which are not connected by an explicit equivalence relation. We can then take the constructive step and change our explicit conceptual theory accordingly. Another difference between constructive and detection CA is that a correct detection CA can lead to a negative result. We can simply detect that our conceptual network does not entail a given conceptual relation or that it precludes it. In contrast, constructive CA fails if it does not result in a new relation.

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⁶ See (Zouhar 2014) and (Zouhar 2015a,b).
⁷ For a discussion of the rational agent see, e.g., Chapter 6 in (Jago 2014).
The role of intuitions in detection can is substantial, but they are not indispensable. Intuitions can be used to detect whether a relation among terms is possible. But we can also find the answer in knowledge that is already available or proceed by combining both of these sources of evidence.

### 3.2.1 Case study: Gettier

The aim of detection analysis is to find out whether some fact holds in our implicit conceptual theory. The implicit conceptual theory is the explicit conceptual theory closed under logical laws. Detection analysis can draw on any of a variety of known logical facts about the relations among concepts, like the fact that if the term $A$ is equivalent to the term $B$ and the term $B$ is equivalent to the term $C$, then $A$ is equivalent to $C$. Generally, detection analysis questions whether we can use some terms according to our known use of other terms.

Gettier’s short article (Gettier 1966) is a well known and influential work. As before, my aim here is not to question the correctness of Gettier’s analysis. Rather, my focus shall be methodological. Although Gettier’s paper only spans three pages, it contains more than one case of detection analysis. Gettier’s analysis sets off with the title: Is Justified True Belief Knowledge? This is an explicit statement of the problem in the form of a question, namely, a question about the existence of a semantic relation among concepts. Gettier then presents two cases (Smith and Jones have applied for a job, Jones owns a Ford) and models the respective situations. Using these cases, he presents counterexamples to the relation in question. He concludes that the relation cannot hold universally. From the perspective of this paper, it is important to highlight Gettier’s use of logical constraints to broaden the initial conceptual theory. In other words, if the implicit conceptual theory is closed under logical laws, the explicit conceptual theory can be broadened while abiding by those logical laws. Gettier specifies the facts that can be described using terms of the language determined by the conceptual theory under investigation. We can thus view such facts as possible models of a conceptual theory, depicting referential relations among concepts. Finally, Gettier asks the intuitions whether the relation in question holds among the concepts in the models presented.

### 3.2.2 A model of detection analysis

Using Gettier’s example and following the presuppositions specified in Section 2 above, we can now state the method of detection analysis as a set of ordered instructions:

1. Specify the conceptual theory $T!$
2. Specify the conceptual problem $P$ according to the theory $T!$
3. Specify the set of logical constraints $S!$
4. Respecting the logical constraints specified in $S$, broaden the conceptual theory $T$ into $T_0!$

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8 For example, “… for any proposition $P$, if $S$ is justified in believing $P$, and $P$ entails $Q$, and $S$ deduces $Q$ from $P$ and accepts $Q$ as a result of this deduction, then $S$ is justified in believing $Q$” (Gettier 1966, 121).
5. For an undetermined number of times, repeat steps 6 and 7!
6. If the broadened conceptual theory \( T_0 \) provides a counterexample, return a negative result!
7. If the broadened conceptual theory \( T_0 \) entails the relation, return a positive result!

Although this method is specified using more instructions than the previous one, it is still a scheme rather than a full-blown specification. The conceptual problem could, for example, be the (supposed) existence of a conceptual relation between at least two concepts. Steps 3 and 4 can be filled with various particular techniques (e.g., by proving theorems). In step 6, intuitions may play their evidential role; for instance, Gettier presents counterexamples and interrogates the intuitions. The scheme above also entails the possibility that the method of detection \( \text{CA} \) returns a negative result.

The difference between constructive and detection \( \text{CA} \) is apparent. Both methods begin by stating the background. But while constructive analysis broadens and changes our conceptual theory without having to abide by the logical constraints of the initial implicit conceptual theory, detection \( \text{CA} \) must remain firmly within such constraints.

### 3.3 Reductive analysis

The problem motivating reductive \( \text{CA} \) is whether some theory or language is reducible to another theory or language. For example, the question could be whether the former is only a notational variant of (a part of) the latter. This, of course, is not the only possible conceptual relation between two theories or languages.

We can ask this question both about theories of languages and about theories in languages. If we focus on the latter, we can use our theories of those languages. In the former case, we cannot do this, but I consider this to be less common. Therefore, I shall focus on the kind of reductive \( \text{CA} \) in which we use our knowledge about languages (or their parts) to reason about the possibility of reduction between them.

When analysing reducibility between two theories, one typically proceeds in either of the following two ways which differ from the point of view of the conceptual relation in question. One can either ask whether one language is equivalent to a part of the other or one can seek to find out whether one language is merely a notational variant of a part of the other. The equivalence in question need not be a one-to-one correspondence. More commonly, a number of simple terms in one language are reduced to a number of complex terms of another language. Science often redefines ordinary terms such as weight, color, well-being, knowledge etc. A well known philosophical reduction is the one between knowledge and justified true belief.

The main difference from both constructive and detection \( \text{CA} \) is that while in both of these we study the relations among parts of a language, in reductive \( \text{CA} \) we study the relations among two or more conceptual networks.

The problem of reductive \( \text{CA} \) is solved by finding out whether the relation in question holds among the given conceptual networks. One could test the existence of such a relation by trying to find counterexamples based on facts and intuitions about these conceptual networks, or one could attempt to prove the existence of the relation on the basis of logical constraints behind these conceptual networks.
3.3.1 Case study: Jackson. Modern debates about the method and role of CA were revived by the work of Frank Jackson (Jackson 1998). Jackson argues for an important role of CA in any efforts to reduce one theory to another: CA is used to locate the meaning of terms of one theory in terms of another theory. There does not seem to be a single unique method to do that. For example, authors working within the so-called Canberra Plan try to provide such reductions using Ramsey-sentences. Here, I focus on the part of Chapter 4 in Jackson’s work in which he deals with the term color.

The theory which Jackson subjects to reduction is the so-called ‘folk theory’, i.e., the conceptual theory of ordinary common sense – a theory of language of laypeople. It need not be specified fully and explicitly and indeed it usually is not. Rather, it is determined by everyday intuitions which play a crucial role in the reduction: the new theory must respect the intuitions of folk theory. Jackson begins the chapter by summarising the knowledge behind the special theory into which he wants to reduce the term color: “We know that objects have dispositions to look one or another color, that they have dispositions to modify incident and transmitted light in ways that underlie their dispositions to look one or another color, that they have physical properties that are responsible for both these dispositions, and that subjects have experiences as of things looking one or another color. We also know that this list includes all the possibly relevant properties.” (Jackson 1998, 87)

He then states the problem: “…we have words for the listed properties – I used them in giving the list. But these words are not color names as such; they are rather terms for dispositions to look colored and affect light, for the physical property bases of these dispositions, and for certain perceptual experiences. Color thus presents a classic example of the location problem” (Jackson 1998, 87).

He then presents his solution to the problem, which he goes on to advocate afterwards. From our perspective, it is important to note that Jackson does not define the term color in folk theory. He explicitly conditions the validity of his proposal on the statements of a special theory: “We will see, how this fact, when combined with what science tells us, forces us to identify colors with certain physical properties” (Jackson 1998, 88). Hence, he reduces a simple term from folk theory into a complex term of a special theory. The important relation between these two theories is that they both must respect the same intuitions. The relevance of a theory is measured by the support it finds in folk intuitions.

From a methodological point of view Jackson determines the folk theory by stating some non-problematic intuitive facts: “In order to address that question, we need to start with what we find most obvious about color. …We can sum this up by saying that some such clause as: ‘red’ is the property of an object putatively presented in visual experience when that object looks red, is a subject-determining platitude for red. Let’s call this platitude, and the corresponding platitudes for yellow, green, and so on, the prime intuition about color.” (Jackson 1998, 89)

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9 For a discussion of the role of intuitions, see e.g., (Nolan 2009).
Then he determines the special theory (just enough for his purposes) and elaborates the special theory with the aim of finding a concept which would play the role of the concept color in folk theory. He does this in a simple argument:

“We can spell the argument out thus:

Pr. 1 Yellowness is the property of objects putatively presented to subjects when those objects look yellow. (Prime intuition)

Pr. 2 The property of objects putatively presented to subjects when the objects look yellow is at least a normal cause of their looking yellow. (Conceptual truth about presentation)

Pr. 3 The only causes (normal or otherwise) of objects' looking yellow are complexes of physical qualities. (Empirical truth)

Conc. Yellowness is a complex of the physical qualities of objects. And likewise for all the colors.” (Jackson 1998, 93)

Jackson simply analyses the special theory and by reasoning within logical constraints he states the concept which plays the role of color in the special theory. In doing so, he solves the location problem for color, at least by his standards.

3.3.2 A model of reductive analysis. Using the above specification of the method and Jackson’s example, I now propose an ordered set of instructions which represents the method of reductive CA:

1. Specify the (part of) theory \( T \) in language \( L \) to be reduced!
2. Specify the (part of) theory \( T_0 \) in language \( L_0 \) into which the theory \( T \) will be reduced!
3. State the relation \( R \) between the theories \( T \) and \( T_0 \) which shall be respected!
4. State the reduction relation \( TT_0 \).
5. Test the reduction relation \( TT_0 \) using the knowledge base with respect to the relation \( R \! \)
6. If the test is positive, declare the reduction \( TT_0 \) between (a part of) theories \( T \) and \( T_0 \)!

The specification of reductive CA in this form enables a comparison with constructive CA and detection CA. While detection CA studies the features of a single conceptual network, reductive CA generally studies the relation between two conceptual networks. As we have seen in the previous subsection, these conceptual networks need not be fully and explicitly specified. The main difference with respect to constructive CA is that reductive CA must not be arbitrary. In other words, it should abide by the role of the concepts of the theory that is to be reduced. On the other hand, a common feature of reductive and constructive CA is that a relation is stated if the analysis is successful.

4. Conclusion. I have presented three different methods of CA. Generally speaking, the method of conceptual analysis is used to study and modify the explicit conceptual theory of some language. It is usually carried out in the form of research into its conceptual network.
The problem motivating constructive CA is the lack of a relation among concepts in the explicit conceptual theory of a language. Constructive CA is used to modify the explicit conceptual theory so that the problem is solved within a (possibly enriched) conceptual theory. This type of analysis studies pre-existing relations in a conceptual theory and proposes a new relation, which is then tested.

The problem motivating detection CA is the possibility of the existence of a conceptual relation in the implicit conceptual theory. The implicit conceptual theory is provided by our knowledge of the explicit conceptual theory of the language in question. Detection CA is used to analyse and broaden our knowledge of the implicit conceptual theory. It abides by the specified logical constraints as well as the initial intuitions of competent speakers. The problem is solved when the existence of the studied conceptual relation is found or proved possible or impossible within the implicit conceptual theory.

The problem leading up to a reductive CA is the existence of a conceptual relation among different languages. Provided our knowledge of explicit conceptual networks of those languages, we study the possible relations among those networks. The problem is solved when the existence of such a relation is proved or shown to be impossible.

All of the methods of CA studied begin with the collection of knowledge about the initial conceptual systems. The researcher then modifies her knowledge either by using intuitions while respecting logical constraints or by providing constructive steps which do not have a negative effect on the correctness of the conceptual theories studied.

References


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