Scientific thinking styles: the different ways of thinking in psychoanalytic case studies

Introduction

In this paper, we will argue and elaborate Cambridge historian and philosopher John Forrester's idea that thinking in cases is a unique style of thinking and doing science, with particular relevance to psychoanalysis. When Freud turned from neurology to psychoanalysis, it was not just a shift in theoretical model, but also a departure from one scientific thinking style to another. Using classic cases by Freud, Stoller and Winnicott, Forrester (1996, 2017) developed the idea that case studies are the medium (or one might say container) par excellence for sharing, demonstrating, discovering, expanding, consolidating and 'thinking' psychoanalytic knowledge. After all, psychoanalysis is both "(1) a particular method of treating nervous disorders and (2) the science of unconscious mental processes" (Freud, 1926, p. 264), and the case study is the format that straddles both sides. Borrowing Thomas Kuhn's (1962) concept of the exemplar, Forrester (2017) was able to outline how case studies lead to practical knowledge and collective scientific labour:

> One learns how to do science not by learning the rules of principles or concepts and then applying them to concrete situations; rather, one learns how to do science by learning how to work with exemplars: extending them, reproducing them, turning a novel situation into a version of a well–understood exemplar (p. 7–8).

The aim of this paper is to clarify and enrich Forrester's 'positive epistemology' for psychoanalysis (Mayer, 2017) based on the idea of thinking in cases as a scientific thinking style. A scientific thinking style is not a philosophically defined ways of reasoning such as induction or deduction, but it is a philosophically informed account of what scientists actually do. It entails not only cognitive operations relating to methodology and argumentation, but also *practices* of generating, sharing, re–locating, assimilating, transforming, and empathising with knowledge. Although we rely on the philosophical work by Ian Hacking and Alistair Crombie to outline the development of the concepts of scientific thinking and doing, we also seek to examine some of the criticisms posed to the definition of scientific thinking style.

After addressing the concept of scientific thinking style, we seek to draw these philosophical ideas closer to thinking in cases in the field of psychoanalysis. Ever since the inception of psychoanalysis, psychoanalytic case studies have been criticised for a variety of reasons: lack of generalisability, replicability issues, subjective bias, to name a few. We argue that some of these concerns can be productively explored by explicating the process of thinking and doing science in psychoanalytic case studies. We outline how thinking in cases differs from other kinds of thinking styles, such as statistical and experimental thinking styles. Attending to these differences is crucial as it allows to differentiate not only *how* (process) but also *what* (end–goal) knowledge each thinking style seeks to produce.

Furthermore, we propose that there is more than one way of thinking in cases: beyond exemplars for analytic generalisation, one can also think in cases as **exemplars** for analogical learning and cases as part of a population for empirical generalisation. Identifying the various modes of thinking in cases in psychoanalysis allows for a closer

inspection of different processes and scientific canons 'in action' in classic and contemporary psychoanalytic cases.

Given the fact that thinking in cases as a scientific thinking style is not unique to psychoanalysis, psychoanalysis can learn from epistemological and methodological advances in other case–oriented disciplines. For this reason, our paper draws on the recent work done in the social sciences in relation to the case study method. Hammersley and Gomm (2000) write in the introduction to their important book *Case Study Method* that case studies had been eclipsed as a method of social research in the 1980s. Since then, the recognition for the case method is rising, and Yin (2014) provides data to substantiate this claim. Interestingly, a similar trend has been noted in psychoanalysis with increasing numbers of case studies being published in scientific journals (Desmet et al., 2013) in many schools of psychoanalysis (Willemsen et al., 2015). An international team of researchers have brought together these increasing numbers of published case studies in a searchable online archive (www.singlecasearchive.com). The invigorating work done by the European Psychoanalytic Federation Working Party on Comparative Clinical Methods (Tuckett, 2008) and IPA's Project Committee on Clinical Observation and Testing (Bernardi, 2014) confirm the continued interest in developing the case study method. These developments show that the case study is still a relevant epistemic genre, not only in psychoanalysis but also in social sciences. By clarifying thinking in cases as a scientific thinking style, we hope to push forward our understanding of the value of the psychoanalytic case and to make a contribution to psychoanalysis as a science in clinical, teaching, and research contexts.

What is a scientific thinking style?

Philosopher Ian Hacking (1992, 2012) has argued that there is not one universal science that brings together the social, human and natural sciences. Instead, he proposed that there is a plurality of sciences that use different styles of thinking, doing, talking, arguing, and showing what each science settles to be objective truths. As such, styles of scientific thinking and doing are practical and active modes of investigating and 'finding out'. Each thinking style conveys *how* (not just *what*) researchers find out about their studied phenomena. In other words, thinking styles have a performative quality: they are ways of *doing science*.

It is difficult to define what a style of scientific thinking and doing is, because, as Buchdahl (1993) suggested, "the existence of 'style' […] is never simply representational" (p. 149). According to historian of science Alistair Crombie (1988), thinking styles consist in:

> […] the various elements that make up an intellectual style in the study and treatment of nature: conceptions of nature and of science, methods of scientific inquiry and demonstration diversified according to the subject matter, evaluations of scientific goals with consequent motivations, and intellectual and moral commitments and expectations generating attitudes to innovation and change (p. 2).

Crombie (1988) identified six thinking styles, and there is no reason to assume that this is an exhaustive list: mathematical postulation and proof, experimental observation and measurement, analogical or hypothetical modelling, taxonomy and classification of natural kinds, statistical analysis of regularities, populations and probabilities, and historical–genetic thinking. These thinking styles are not objective in themselves: they are not 'natural' or 'given' ways of acquiring truth. Rather, they were developed by humans (and as such, they are grounded in human cognition and cultural history) as a

means to conduct investigations or answer to certain scientific standards. For example, before the mid seventeenth century, there was no real concept of probability and statistics in Europe; nowadays, a statistical thinking style is advocated by Nobel prize winning psychologist Daniel Kahneman (2011) as the most reasonable way to take decisions in any field of social life.

An important feature of scientific thinking styles resides in the fact that they introduce new objects, propositions, or explanations about their studied phenomena. That is not to say that the studied phenomena do not exist outside of the thinking style. Rather, thinking styles introduce new, but fundamentally different ways of representing the phenomena. Each thinking style allows scientists to speak, think and act in a unique way about their object of study. Compare for instance the following meaningful propositions made about a depressed patient in three different scientific thinking styles:

i. Within the statistical thinking style, one can say: "Patient X scores above the clinical cut–off on the Beck Depression Inventory–II." This proposition represents the depression of the patient as a metric and situates that metric within a population (i.e., the sample that was used to statistically infer a cut–off score);

ii. Within taxonomy and classification thinking style, one can say: "Patient X can be diagnosed as having a major depression in terms of the Diagnostic and Statistical Manual of Mental Disorders." This proposition represents the depression as belonging to a class that is defined by a number of diagnostic criteria, and situates this class in relation to other classes (e.g., the class of bipolar disorder, the higher–order class of affective disorders, etc.);

iii. Anticipating the next section in this paper, we would like to add that within the psychoanalytic thinking in cases style, one can say: "Patient X suffers a core psychic conflict between love versus anger, hostility and ambivalence towards the lost object." This proposition represents the depression as a psychic conflict that is situated within the patient's past and current life (e.g., past and current experiences of loss, separation, deprivation and grievance).

Each proposition is only meaningful within its style. For instance, proposition *i* relies on the application of a specific instrument (questionnaire), according to a specific methodology (standardised test situation), on the basis of specific assumptions (depression is a unidimensional, quantifiable object of study), by a person with specific skills (test administration and test interpretation), in order to show the depression in a specific way (line graph, chart, numerical table), with a particular goal (determine the severity of a depression), and a certain persuasiveness (e.g. the statistics behind the development of the questionnaire). For someone who operates within the taxonomy and classification thinking style, proposition *i* is not meaningful (although he or she might understand the proposition based on previous encounters with the statistical thinking style), and it does not help to make a categorical diagnosis of patient X. In that sense, each thinking style creates its own objects (in this case, depression as a unidimensional construct, as a mental illness, or as an expression of a psychic conflict) and is associated with very different research practices. This does not mean, however, that the object is entirely constructed by the style: the experience of depression remains to be very real, but its conceptualisation differs in each thinking style.

Hacking (1992, 2012) asserts that styles of scientific thinking and doing are self–authenticating, in a sense that they do not answer to some other, higher, or deeper

standard of truth and reason than their own: "There is no higher standard to which [thinking styles] directly answer [...] It is our knowledges that are subject to revolution, to mutation, and to several kinds of oblivion; it is the content of what we find out, not how we find out, that is refuted" (1992, p. 13). We do not take this to mean that there are no standards of verification, but rather that standards of verification are internal to the style in which they are developed. Scientific thinking styles provide their own in canons of *verification* that provide *conditions for truth*: "Each style has become what we think of as a rather timeless canon of objectivity, a standard model of what it is to be reasonable about this or that type of subject matter […] and to be reasonable in this or that domain" (Hacking, 1992, p. 10). He gives the example of significance testing in the statistical thinking style: statistical calculation allows the scientist to estimate a parameter and at the same time estimate the probability of this estimate to be correct. This canon of verification through significance testing is not a reflection of a higher or deeper 'meta-canon' for determining the truth; it is an internal standard.

Critics have accused Hacking of epistemic relativism for his claim about the self–authenticating nature of scientific thinking styles, because all epistemic systems (that are encompassed by different thinking styles) could be perceived, in some sense, as equally valid (Kusch, 2010; Sciortino, 2016). This means that the justifiability of a given proposition depends entirely on the respective style of reasoning and its implicit canons of verification. The risk here is that, even if different styles might value each other's claims, there will be 'epistemic ambivalence' because the two will have their respective verification canons upon which different truth claims can be judged. There is also the issue of 'epistemic disagreement': since different thinking styles have their own epistemic principles for putting forward relevant propositions (e.g., average income statistics do not express a proposition relevant to the experimental thinking style), the same

proposition can be relevant to one domain of reasoning, but not to the other. Thus, there is a broader issue of how we justify and/or compare truth claims put forward by different thinking styles, which has not been sufficiently addressed in Hacking's writings.

The debate about epistemic relativism is still ongoing and we do not claim to be able to resolve this deep philosophical controversy. We do want to point out, however, with Kusch (2010), that Hacking is not referring to the 'anything goes' kind of relativism: "once a style of reasoning is in place, its epistemic principles determine whether a meaningful sentence is justified or unjustified, rational or irrational." (p. 167) Let us take the earlier mentioned propositions concerning the depressed patient: (i.) 'patient X scores above the clinical cut–off on the Beck Depression Inventory–II' (ii.) 'patient X can be diagnosed as having a major depression in terms of the Diagnostic and Statistical Manual of Mental Disorders' and (iii.) 'patient X suffers a core psychic conflict between love versus anger, hostility and ambivalence towards the lost object'. The validity of these three propositions is not entirely independent as they all relate to the same reality: the depression in patient X. But each proposition is only meaningful in its respective thinking style. Therefore, it might be perfectly possible that proposition (i.) is validated in the statistical thinking style, while propositions (ii.) and (iii.) are invalidated (or irrelevant) in their respective thinking styles. However, it is not possible that patient X *simultaneously* suffers and does not suffer from a core psychic conflict between love versus anger, hostility and ambivalence towards the lost object.

Although psychoanalysis has been riddled with discussions of its scientific status, little attention has been paid to its underlying scientific thinking style. In this paper, we build on Forrester's (1996, 2017) insight that psychoanalysis, along with several other disciplines, is characterised by a thinking style that is based on the concept of the case. Case studies have taken up a central place in the development of psychoanalysis, and they

remain central despite fierce criticisms (Willemsen et al., 2015). Our aim is to describe the various ways in which the psychoanalytic thinking style 'puts the case to work'. Herein, we refer to the case study as a broad epistemic genre – *a way of doing science* (Morgan, 2012). This involves not only thinking in (or with) written case studies, but also in cases as teaching examples, cases for supervision, patient cases in clinical practice, etc. In this sense, we seek to describe how the case has been used by psychoanalysts, both classic and contemporary, in their clinical work, their thinking, speaking, presenting and writing about psychoanalysis.

Table 1

A short summary of features that constitute scientific thinking styles

(Insert Table 1 here)

Thinking in cases

Hacking's thesis about the use of different styles of scientific thinking and doing proved to be crucial to John Forrester's work (Mayer, 2017). Forrester, who spent much of his life researching the history and philosophy of psychoanalysis, agreed with Hacking that there is a plurality of sciences, methods, and thinking styles. Alongside the list of six thinking styles, Forrester (1996) proposed a seventh: *thinking in cases*. This style of thinking and doing is not unique to psychoanalysis and it can be seen 'in action' in other disciplines, such as medicine, law, social work, anthropology, management science and psychotherapy. Whilst these disciplines differ in their studied phenomena and methods of inquiry, they nevertheless share a scientific interest in thinking about their 'objects'

through cases. For example, every teacher in psychoanalysis knows that it is impossible to explain the idea of psychic conflict without referring to a vignette. It is as if knowledge in each of these disciplines can never fully emancipate from concrete instances. The case–based reasoning in these disciplines can be observed in the following ways (Forrester, 2017):

1. They have a different relation to theory, in the sense that the specificity of the case is central;
2. They reason in analogy by creating complex networks of similar and dissimilar cases;
3. Their theories are aimed at problem–solving (action) rather than constituting parts of a body of knowledge (theory).

By describing the features of case–based reasoning, Forrester sketches a 'positive epistemology' for psychoanalysis; positive since Forrester starts from the strengths of thinking in cases as a scientific thinking style (Mayer, 2017). Forrester works on the assumption that psychoanalysis will benefit more from a thorough investigation of how the thinking style operates within case–based disciplines and how it can be improved from the inside, rather than to criticise it on the basis of canons of verification that are used in other thinking styles. At the same time, however, Forrester acknowledges the limitations of the case study as a method for knowledge generation. Before we continue the description of thinking in cases, we want to remind the reader of some of the essential criticisms raised against psychoanalytic case studies.

The first, and arguably most common, criticism is that of subjective bias: psychoanalytic case studies are seen as potentially 'contaminated' by the psychoanalyst's

feelings, values, and intersubjective pressures. Such biases may emerge from the psychoanalyst's unresolved transference relationships and/or uncontained countertransference dynamics (Hinshelwood, 2013) as well as 'excessive' group loyalties within the field (e.g., generating normative or unexceptional case studies in order to conform to existing psychoanalytic ideas) (Spence, 2001). Psychologist Frank Sulloway went as far as to say that Freud's case histories "blend into the kind of psychoanalytically reconstructed history that helped to create the Freud legend. [...] Case histories are by no means compelling empirical demonstrations of the correctness of his psychoanalytic views" (1991, p. 521). An even earlier and now classic criticism by the philosopher of science Karl Popper (1962) deemed Freud's psychoanalytic case studies as unfalsifiable because they are "able to explain practically everything that happened within the [field] [...] Whatever happened always confirmed it" (p. 45). This resulted in significant research reservations: how can we use knowledge from unique and highly contextual single cases for other clinical situations? And more importantly, how can we verify that the knowledge produced in these cases is not simply "confirming the theory" or "creating the Freud legend"?

The second criticism raises concerns about the generalisation of case study findings. Observations from single case studies are often thought to be of limited value to the study of broader clinical populations as they "provide no indication as to whether the [conclusions apply] to all other, many other, a few other, or no other human beings" (Janis in Wallerstein & Sampson, 1971, p. 41). The issue of generalisation has become increasingly important for clinical research, thus leading to further questions about the value of single case observations.

Lastly, there is an overarching question of what one can learn from reading psychoanalytic case studies: are we learning about the patient and their clinical condition

or are we tracing the psychoanalyst's interpretations? In most instances, the case study reader is inevitably learning about both. However, there may very well be instances where the representation of the case subject – the patient – is impossibly intertwined with the case author's – the psychoanalyst's – reasoning and thinking processes. This point is further elucidated by Walsh (in press): "But if case–study writing entails communicating something of the intimacy of the analytic encounter, […] then, irrespective of the particular clinical phenomenon it broaches, the case–*study* is a medium that will necessarily fall short of representing the case–*subject* in its entirety" (p. 7–8).

This paper does not aim to solve these shortcomings of the case study method. At most, we try to introduce some new ideas in the debate about objectivity and generalisation in psychoanalytic case studies by drawing on methodological and epistemological advances in the social sciences. With Forrester, we argue that thinking in cases is a separate style. Beyond Forrester, we propose that psychoanalysts, past and present, think in cases in *more than one way*: we can think not only in cases as exemplars for analytic generalisation, but also in cases as exemplars for analogical learning and cases as part of a population for empirical generalisation.

Thinking in cases as exemplars for analytic generalisation

The first mode of scientific thinking is the most typical for psychoanalysis, and arguably the most controversial: thinking in cases as exemplars for analytic generalisation. This thinking style in not unique to psychoanalysis, as it can also be found in neurology, sociology, and anthropology. Forrester (1996, 2017) used Kuhn's concept of exemplars to describe how knowledge from psychoanalytic case studies can be reproduced and

extended in other cases. Beyond Forrester's account, however, there is little clarification as to how the singularity of the psychoanalytic case can be transformed into generalisable observations relevant for other cases. As such, we will be referring to the more recent work done by philosopher of science Mary Morgan (2014), in which she describes a specific strategy of moving from the particular to the general called the *finding of exemplar representatives*. In order to clarify the generalisation process in this mode of thinking in cases, we will discuss Robert Yin's (2014) concept of analytic generalisation.

An exemplar representative is "one case study that defines the type and thus its characteristics" (Morgan, 2014, p. 1014). The strategy consists in establishing case–specific knowledge as typical and therefore relevant for the understanding of the type of interest. Morgan refers to the Kula ring as an exemplar representative for the understanding of gift exchange systems. Malinowski's ethnographic description of the ritual exchange of apparently worthless necklaces and armbands between tribes on the Trobriand Islands has become a central point of reference for thinking about the nature of gift giving in many different cultures and times. Study of the Kula ring reveals that gift giving can be a means to forge a social connection and that the act of giving is more important than the object that is given. This knowledge about the type helps to understand practices of gift giving in different contexts, for instance on Christmas day in Western societies.

A closer look at Freud's oeuvre reveals that psychoanalysis is founded through the use of similar exemplars. The way Freud organised his material in *The Interpretation of Dreams* (1900) is very illustrative in this respect: after a first chapter in which he reviewed the literature, he devoted his second chapter to the presentation of his

exemplar: the famous dream of Irma's injection. The analysis of the specimen dream ends with the postulation of a crucial insight (Freud, 1900):

> If we adopt the method of interpreting dreams which I have indicated here, we shall find that dreams really have a meaning and are far from being the expression of a fragmentary activity of the brain, as the authorities have claimed. *When the work of interpretation has been completed, we perceive that a dream is the fulfilment of a wish* (p. 121).

In other words, the dream about Irma's injection has offered Freud the possibility to redefine the type to which dreams belong: dreams are not 'fragmentary activity of the brain' as the writers Freud discussed in the first chapter had claimed, but they are psychologically meaningful phenomena. In the same way as Malinowski's study of the Kula ring redefined our thinking about various practices of gift giving, the dream of Irma's injection allowed Freud to reframe our thinking about dreams.

In a letter to Fliess, Freud described the opening chapters of *The Interpretation of Dreams* as follows (Freud, 1950, Letter 114):

> The whole thing is planned on the model of an imaginary walk. First comes the dark wood of the authorities (who cannot see the trees), where there is no clear view and it is easy to go astray. Then there is a cavernous defile through which I lead my readers—my specimen dream with its peculiarities, its details, its indiscretions and its bad jokes—and then, all at once, the high ground and the open prospect and the question: "Which way do you want to go?"

It is clear that Freud intentionally put forward one particular case because this particular case allowed him to open up a new perspective on dreams. He entitled this chapter "An

analysis of a specimen dream" [*Die analyse eines Traummusters*]. The German *Muster* means model, example, pattern. The other dreams that are described later on in the book are used to refine and expand the description of the type and to verify it, for instance by supplying cases that defy the type as initially described (e.g. the nightmare).

Freud used the same approach in *Psychopathology of Everyday Life* (1901), which he introduced by analysing the forgetting of the name of Signorelli. The principles he described on the basis of this *Muster* are then used to understand a wide range of parapraxes. The exemplar allowed Freud to lay out from the start the type (in this case, parapraxes as psychologically meaningful phenomena) in its full richness and complexity. The case is assumed to demonstrate something important about the type. In the figure below, this reasoning process is represented graphically: the type X is studied by looking at case Y, under the assumption that case–specific features A, B and C are important features of the type.

FIGURE 1: The process of thinking in cases as exemplars for analytic generalisation

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(Insert Figure 1 here)

This reasoning process is what social scientist Robert Yin (2014) calls analytic generalisation: 'the logic whereby case study findings can extend to situations outside of the original case study, based on the relevance of similar theoretical concepts or

principles.' (p. 237) In analytic generalisation, first an inference is made from an instance (a case) to a hypothesis, a construct or a theory (what we call the type) at a conceptually higher level. Second, this hypothesis, construct or theory can then be applied to other instances (cases) where it seems relevant. Analytic generalisation needs to be distinguished from empirical generalisation. In empirical generalisation, an inference is made about the features of a population on the basis of a sample from that population (Gomm, Hammersley, & Foster, 2000, p. 103).

Empirical generalisation starts from knowing to which population a case belongs (the case is selected because it belongs to a specific population), and the generalisation results in new knowledge about a specific population. For instance, one could be interested in determining whether all dreams are wish fulfilments. We will return to this in the section on '*Thinking in cases as part of a population for empirical generalisation'*. Analytic generalisation, on the other hand, starts from a theoretically defined situation (the case is defined as a type of…), and the analytic generalisation is achieved through corroboration, modification, rejection, expansion, or advancement of the theoretical understanding of the type. For instance, with the dream of Irma's injection, Freud demonstrated that the dream is a meaningful psychological phenomenon rather than a disintegrated cerebral activity.

In the case as an exemplar for analytic generalisation, the researcher starts from a theoretical or clinical problem and finds a case to investigate the issue. Suitable cases are cases that contain rich data and that are clearly linked to the type of interest. The researcher describes the core features of the case, the relations between these core features, and the way in which these features are embedded in the complexity of the whole case. By comparing this description with existing theory, it will become clear which

theoretical relations can be (dis)confirmed, and which new theoretical relations are revealed *in situ*.

The Schreber case study (Freud, 1911) is a good example of how Freud built a case into an exemplar. The aim of the Schreber case study is to investigate the clinical phenomenon of paranoia in relation to other forms of psychopathology. Freud did not choose Schreber because he is in any way a typical case of paranoia. In fact, he stresses at one point that Schreber is an "unusual and in itself bewildering" case (1911, p. 18). Freud did not explain why he chose to focus on Schreber (although he does point out that he does not take on paranoid patients for psychoanalysis and therefore has no other option than to work with material from outside the consultation room). The paper is organised in three sections entitled *Case history*, *Attempts at interpretation*, and *On the mechanism of paranoia*. The titles already reveal the process of analytic generalisation, which moves from the particularity of the case over an interpretation of the case, towards a general claim about paranoia. In the third section, Freud came to the conclusion that paranoia is "an independent clinical type" (1911, p. 76) that can be differentiated from schizophrenia. The principle features that Freud found in Schreber are, firstly, that the mechanism of projection is crucial, and secondly, that there is a homosexual impulse at the basis of his pathology.

In the final step of his reasoning process, also in the third paragraph "*On the mechanism of paranoia*," Freud used Schreber to make a statement about all forms of paranoia (delusions of persecution, erotomania, delusions of jealousy and megalomania): "it is a remarkable fact that the familiar principal forms of paranoia can all be represented as contradictions of the single proposition: "*I* (a man) *love him* (a man)", and indeed that they exhaust all the possible ways in which such contradictions could be formulated"

(Freud, 1911, p. 63). At this point in his reasoning, Freud has moved from the case of Schreber to paranoia as a clinical type and arrived at a conclusion about all forms of paranoia. In other words, the features that he used to define a type (paranoia) on the basis of one in–depth case study, become relevant to many other cases. This reasoning process is similar to what we found in *The Interpretations of Dreams* (the dream of Irma's injection → the dream as a type → various forms of dreams) and in *Psychopathology of Everyday Life* (the forgetting of the name of Signorelli → forgetting as a type → various forms of parapraxes).

It is important to note that we are not arguing that Freud's conclusions about Schreber are correct, as indeed questions can be raised about the use of an autobiography as the sole source of information and about Freud's method of selecting and interpreting information from this source. Our point is that his thinking style, which relies on the exemplar, is not revelatory of a predilection for anecdotal evidence on Freud's part, but constitutes a thinking style that is shared with other disciplines and that we now understand better through contemporary work in philosophy of science and the social sciences.

An important limitation of the case as exemplar for analytic generalisation lies in the fact that one can end up in a circular mode of thinking. If a type X is studied by looking at case Y, then the features of case Y might get confused with the features of type X. In other words, how can one know whether certain features are case-specific of not? This can only be determined by studying more cases. Freud did not constrain his research to just one case. In order to verify his claims about Schreber, he discussed the mechanism of projection in his correspondence with Abraham (1911, p. 41), and in relation to homosexuality and paranoia, Freud (1911) wrote:

> Distrusting my own experiences on the subject, I have during the last few years joined with my friends C. G. Jung of Zurich and Sandor Ferenczi of Budapest in investigating upon this single point a number of cases of paranoid disorder which have come under observation. The patients whose histories provided the material for this enquiry included both men and women, and varied in race, occupation, and social standing. Yet we were astonished to find that in all these cases a defence against a homosexual wish was clearly recognizable at the very centre of the conflict which underlay the disease, and that it was in an attempt to master an unconsciously reinforced current of homosexuality that they had all of them come to grief. This was certainly not what we had expected (p. 59).

Two observations can be made here. First, it is striking how Freud presented the Schreber case study as part of a collaborative, international research project involving members from the newly created International Psychoanalytic Association. Pletsch (1982) pointed out the shift in the audience that is addressed by Freud in his case studies: the early case studies (e.g. *Studies on Hysteria* and the case of *Dora*) address a medical audience, while later case studies give the impression of a contribution *entre nous* and were published in the first psychoanalytic periodical, the *Jahrbuch für psychoanalytische und psychopathologische Forschungen*. Second, Freud was aware that one case study does not prove anything, but several case studies conducted by different people can lead to robust knowledge. These other cases act as replications of the original case study. Unfortunately, Freud did not elaborate on the comparison with other cases in the context of the Schreber study.

A contemporary use of the case as an exemplar can be found in the paper by Leuzinger–Bohleber and Teising (2012) on prenatal and genetic diagnostics (PND). They

describe the case of a pregnant woman, Mrs F, with a genetically transmitted illness, who discovers that her unborn child is haemophiliac. Mrs F decides to have an abortion, but later has another pregnancy and gives birth to a healthy girl. The research question in this paper is whether this case "can offer a specific and enlightening perspective on this complex and delicate topic [i.e. how people deal with negative PND]" (p. 294). In order to answer this question, the authors have rich data at their disposal, notably the analyst's report of Mrs F's psychoanalysis and two follow–up interviews 16 years after completion of the treatment. Leuzinger–Bohleber and Teising find that the confrontation with the negative PND triggered an archaic state of mind in Mrs F, characterised by splitting and unconscious phantasies of murder. In the discussion, it becomes clear that the authors think this finding has a broader relevance (analytic generalisation): they describe the decision to have an abortion as potentially traumatic for any woman, as it can trigger the archaic state of mind they found in Mrs F, and they conclude that "all women/couples undergoing late interruptions of pregnancy following PND absolutely need a counterpart to their reactivated archaic inner world in their outside reality – whether in a loving partnership, family, friends, or in the professional medical care during PND" (p. 312). Interestingly, similar to Freud in the Schreber study, Leuzinger–Bohleber and Teising (2012) refer several times to other cases they have studied that supposedly confirm their findings, without discussing these cases in any detail. This confirms the idea that replication of findings is intrinsic to thinking in cases as exemplars, although, unfortunately, these replication studies are barely published (a blemish that marks other sciences as well).

Thinking in cases as exemplars for analogical learning

Thinking in exemplar cases for analytic generalisation is not the only mode of thinking in cases. Forrester (1996) seems to allude to this when he briefly mentions the use of the single case for analogical learning, calling it a "*pedagogic* tool that duplicates or repeats an essential element of medical practice" (p. 14). The implication here is that case studies can be used to teach and illustrate situations that are common in clinical practice by offering a vicarious experience of that situation. But Forrester did not further differentiate between the learning and teaching function of cases from the theory–building function of cases. Whilst one case can be both an exemplar for analytic generalisation (providing rich data allowing for an analytic generalisation in relation to a type) and an exemplar for analogical learning (providing rich description, detailed experiential account, and "'know–how' knowledge), we argue that these are, in fact, two different forms of thinking in cases with different processes and end–goals. Whereas thinking in cases as exemplars for analytic generalisation involves the process of relocating knowledge about a concrete case into an abstract type, we argue that thinking in cases as exemplars for analogical learning involves the process of relocating knowledge about one concrete case to another concrete case.

Educational psychologist Robert Stake's book on the *Art of Case Study Research* (1995) is a central resource on the topic of cases as exemplars and their pedagogic qualities. He firstly notes the importance of having case narratives that are well–attuned to human affairs: rich descriptions of relationships, perceptions and emotions rather than objective observables or causal laws. Stake (2010) refers to cultural anthropologist Geertz's concept of '*thick description*': the case narrative should present a detailed description of the individual or situation and convey an empathic understanding of the latter, including researcher's interpretations. Herein, Stake (1978) argues, lies the advantage of case studies in comparison to other research methods: "Case studies will

often be the preferred method of research because they may be epistemologically in harmony with the reader's experience and thus to that person a natural basis for generalisation" (p. 5).

At first glance, Stake's proposition about learning from cases as exemplars seems to be counter–intuitive: on one hand, he argues that case studies should contain interpersonal and highly contextual data (particularisation), and on the other, he suggests that this data can be used for learn something with a broader relevance. For him, the 'as if it happened to us' experiential quality of cases allows the readers to engage and recognize similarities between case narratives and their own personal or professional experiences. In other words, the propositional aspects of such case studies capitalise upon the reader's experience: there is a mental connection with the atmosphere, thoughts, feelings, and motivations of the case. Stake (1995) coined this process a naturalistic generalisation: "Naturalistic generalisations are conclusions arrived at through personal engagement in life's affairs or by vicarious experience so well constructed that the person feels as if it happened to themselves" (p. 85). However, this process should be described as analogical learning, as it relies on making an analogy rather than a generalisation.

This is an important difference from the process of analytic generalisation in thinking in cases as exemplars; whilst the latter is focused on extrapolating inferences, hypotheses and findings to *theory*, analogical learning is predominantly used to make *practical decisions* in the consulting room. Furthermore, although analogical learning can teach us something that is common in clinical practice (and so it shares an interest in 'commonalities' with other ways of scientific thinking), this is not done via statistical patterns of frequency and co–variation. Instead, the focus is on reasoning by analogy and experiential knowing: it went like this before in case *x*, so it is possible that it will go like

that again in cases *y* and *z*. For example, a clinician dealing with trauma patients reads a case about transference–related challenges with a patient suffering from traumatic neurosis. The clinician learns about clinical techniques and countertransference reactions that are useful in establishing a therapeutic relation with trauma patients and begins using them with his own patients. One could call this acquiring professional experience: by studying diverse clinical situations, the clinician is able to recognise, through the process of analogical learning, how to act in their own professional practice. Freud was well aware of this quality of the case and how important it is in the training of psychoanalysts. He made the famous comparison between learning psychoanalysis and learning how to play chess: the openings and end games can be studied in books, but the infinite variety of moves in between can only be learned through a diligent study of games fought out by masters (Freud, 1913).

In the figure below, this reasoning process is represented graphically: case 1 represents a set of four properties (A, B, C, and D) that are defined in a detailed and rich case narrative. Case 2 is similar to case 1 – they share three properties (A, B, C) but there is an unknown fourth property in case 2. Through the process of analogical learning, the reader can infer that, since it was property D in case 1, then it is possible that it will be property D in case 2 as well. Therefore, through the reader's engagement with the rich and experiential narrative of case 1, they can make a practical assumption that case 2 contains a similar pattern or situation.

FIGURE 2

The process of thinking in cases as exemplar for analogical learning

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(Insert Figure 2 here)

Whilst this style of thinking does not involve relocating knowledge to a more abstract level (as in analytic generalisation), it nevertheless demonstrates a local knowledge transfer: case 1 may demonstrate a powerfully experiential narrative that can be transferred not just to case 2, but many other cases. However, this analogical learning will still depend on the particular (not general) nature of case 1: whilst it describes something that is typical or common to clinical practice (e.g., transference), it is its vicarious experience and 'know–how' properties that ultimately make this case transferrable (in a practical rather than theory–building sense) onto other cases.

Recognising a new situation as a version of a previous situation is not purely a cognitive operation. Stake (1978) argues that naturalistic generalisation can only emerge from knowledge that contains 'lived experience' and interpretive understanding of "how things are, why they are, how people feel about them, and how these things are likely to be later or in other places" (p. 6). These ideas are not new or exclusive to case methodology. At the turn of the twentieth century, German philosopher Wilhelm Dilthey (1910) argued that there are, essentially, two different ways of doing science: through law–governed explanations (*Erklären*) and through relational understanding of human experiences (*Verstehen*). For Dilthey, the explanatory mode of investigation is well suited for the study of causal connections, physical properties, and law–governed regularities. However, he argued that the empiricism of explanatory accounts undermines the uniqueness, subjectivity, and meaning of 'lived experiences'; that there are important non–quantifiable elements in the study of the human psyche that can be only studied through understanding: "We understand ourselves and others only when we transfer our

own lived experience into every kind of expression of our own and other people's lives" (Dilthey in Stake, 1978, p. 5)

This kind of understanding can be linked to the Hungarian–British scientist Michael Polanyi's concept of *tacit knowledge.* Polanyi's basic proposition is that "we can know more than we can tell" (1966, p. 4) – that is, we can learn from experiences, activities, ideas, and skills that are not easily expressible but nevertheless remain central in how we engage with and learn about the world. Tacit knowledge can be described as a 'know–how' knowledge: it involves learning from experiences, interpersonally sharable statements, ruminations, metaphors, associations, meanings, ideas, and applications. Such knowledge is deeply contextual, which is what makes it difficult to transcribe or verbalize. This difficulty, however, need not be considered as a problem or flaw in thinking in cases as exemplars for analogical learning. It is not always easy to differentiate the subject from the author in psychoanalytic case studies due to the inextricable intimacy of the analytic encounter (Walsh, in press). However, this very intimacy prompts the production of tacit knowledge within the clinical paradigm, thus demonstrating the experiential, 'know–how' knowledge of dealing with transference and countertransference dynamics, emotional intensity, and forms of unspoken dialogue between patient and analyst. With Walsh (in press), we would like to argue that the thinking in and writing of cases as exemplars for analogical learning is not only "no cause for lament" (p. 19) but that it is also crucial for the study of clinical technique.

Freud was also mindful of the challenges that come with acquiring tacit knowledge, in particular with respect to psychoanalytic technique. In *On 'Wild' Analysis* (1910) he writes: "This technique cannot yet be learnt from books, and it certainly cannot be discovered without great sacrifices of time, labour and success. Like other medical techniques, it is to be learnt from those who are already proficient in it" (p. 226). That is

one of the reasons to undergo training analysis. In *Analysis Terminable and Interminable* (1937), Freud wrote:

> It [the training analysis] has accomplished its purpose if it gives the learner a firm conviction of the existence of the unconscious, if it enables him, when repressed material emerges, to perceive in himself things which would otherwise be incredible to him, and if it shows him a first sample of the technique which has proved to be the only effective one in analytic work (p. 248).

In other words, one has to experience how psychoanalysis works on oneself in order to be able to understand it and apply it to others.

This is where Polanyi's tacit knowledge becomes central to Stake's naturalistic generalisation: compelling, engaging, and realistic case narratives enable the reader to learn from experience. The reader is not learning from facts (explanatory or 'know–that' knowledge) but from an everyday perspective of what it is like to work in this or that clinical setting. But even more importantly, conveying tacit knowledge in case narratives is not just about being able to re–tell a clinical story: there is a psychological dimension characteristic of a form of *empathy* (Von Wright, 1971). Intentions, feelings, and motivations enable the reader's understanding because they point to the meaning and aim of the case, which may be different for each person.

From the perspective of cases as exemplars for analogical learning, a good exemplar will rely on particularised knowledge (Geertz' 'thick description'), a relational understanding of human experiences (Dilthey's *Verstehen*) and a practical, 'know–how' knowledge (Polanyi's tacit knowledge). These three elements are crucial for the scientific canons (what we identified as the propositional or persuasive qualities of the case

narrative) of thinking in cases as exemplars for analogical learning: "It is the interpretation of the data, of the observations and measurements, that will stand, not as proof but as persuasion of *one meaning more than another*" (Stake, 2010, p. 25).

Contemporary examples of this mode of thinking in cases can be found in any clinical training: during clinical workshops, intervisions and supervisions, psychoanalysts present a 'thick description' of their relational understanding of their work with a patient, not only to better understand this particular patient, but also to develop "know–how" knowledge that can be useful in future clinician situations. The newest addition to this mode of thinking is the Three Level Model developed in the IPA Project Committee on Clinical Observation and Testing (Bernardi, 2014). It consists in clinical working parties with psychoanalysts from different theoretical strands who discuss selected clinical material in relation to one patient. The focus is on "real analytic practice" rather than "ideal models" (p. 25). The aim is to arrive at a consensus of experts concerning the process of change in that particular patient. The clinical working parties often engage in a mental experiment by imagining different ways in which interpretative strategies from different theoretical orientations may or may not facilitate change in the patient. The Three Level Model is explicitly not a research method that tries to determine which psychoanalytic theory is. But participants feel that the discussion "helps them get closer to the patient's vantage point […] and this helps to empathically anticipate the way the patient will receive the interpretations." (p. 27).

Similarly, the European Psychoanalytic Federation Working Party on Comparative Clinical Methods (Tuckett, 2008) involves case study discussions in which an analyst presents work in progress to a small group of 8–14 participants. The goal of these meetings is analogical learning: psychoanalysts from different clinical orientations

present their work and share each other's approaches to similar and divergent clinical situations. Clinical assumptions and underlying theoretical models are examined, assessed and discussed in a structured way. The party's overall purpose is to use the 'lived experiences' common to each psychoanalytic tradition and training institute to achieve a deeper understanding of what constitutes psychoanalytic clinical work.

Thinking in cases as part of a population for empirical generalisation

The third mode of thinking in cases consists in considering cases to be part of a population for empirical generalisation. A patient can be assumed to be member of one or more populations, be it a population defined by demographic, clinical or other characteristics. This assumption is very common in the statistical thinking style, but it is less obvious in the case-based disciplines: a legal case, a company or an Amazon tribe can be perfectly legitimate objects of study, without any need to determine, if at all possible, to which populations these cases belong. A similar point has been made by Peter Caws about psychoanalysis as 'the science of the idiosyncratic subject' (2003, p. 625) that should avoid any generalisation over the population of humans. We will argue, however, that psychoanalytic cases can be considered to be part of a population and that Freud already engaged in this mode of thinking in cases.

In thinking in cases as part of a population, the study of the patient becomes a means to learn about a population of interest. In this mode of thinking, knowledge claims are based on the study of more than one case. Each case is considered to be a variation within a population, and several cases need to be studied to get an understanding of the population characteristics. However, this does not imply that cases are grouped together to form a sample. In this respect, it is important to make the distinction between the mode

of thinking in cases and the statistical thinking style, which also aims to study population characteristics.

The statistical thinking style is based on decontextualization of observations: the object of interest is studied by discarding the context within which this object manifests itself. This decontextualization is a necessary condition for the quantitative estimation of population parameters, such as the average and the standard deviation (in technical terms, this is the assumption of independence of observations). This assumption seems acceptable for features such as bodily weight but is more contentious for psychological features such as personality. Psychoanalysis relies on the case method because this method consists in studying an object within a context where the boundaries between the object and its context are not clearly demarcated. If cases are considered to be part of a population, each case presents a *variation* of the phenomenon of interest within a context, and the interest is not in the average, but in the variation.

Unlike exemplar cases for analytical generalisation, cases as part of a population can be used for empirical generalisation. Empirical generalisation "involves drawing inferences about features of a larger but finite population of cases from the study of a sample drawn from that population" (Gomm, Hammersley, & Foster, 2000, p. 103). It is sometimes conflated with a statistical methodology; however, statistical sampling is just one technique to capture relevant heterogeneity within a population (allowing for empirical generalisation). Empirical generalisation can also be achieved from a combination of cases about a complexly varying phenomenon (Gomm, Hammersley, & Foster, 2000). Psychoanalytic case studies are ideal for such a comparative exercise: because they do not isolate the phenomenon of interest from its context, case studies yield a large number of potentially relevant observations. If similar observations are made in a number of cases that differ in their contextual data, then one can begin to

establish the variability of conditions under which the phenomenon of interest occurs (Iwakabe & Gazzola, 2009).

From first glance, thinking in cases as part of a population may appear similar to exemplar cases for analytic generalisation, since both involve studying characteristics that can be relevant to many other cases. However, cases as part of a population are studied on the basis of their membership to a *population of interest*, while cases as exemplars for analytical generalisation are studied on the basis of a *conceptual type* they represent. The idea behind cases as part of a population is that each case represents a relevant variation. By comparing one case (or a series of cases) to another, one will discover common themes as well as significant variations (cultural, social, economic, demographic, etc.) between them. Therefore, a good case as part of a population is one that can be situated in and compared to other cases from the population of interest. It should teach us not just about the studied individual, but also about the population the individual belongs to.

In the figure below, this reasoning process is represented graphically: there is a series of cases (case 1, case 2 and case 3) that are grouped together because they share the same phenomenon. However, each case has a different combination of properties, which may be identical, similar or different from one another. This implies that the phenomenon of interest is occurring under a variety of conditions. Studying the variation presented in these cases will lead to a more robust knowledge about the phenomenon that can be subsequently generalised onto the population of interest.

FIGURE 3

The process of thinking in cases as part of a population for empirical generalisation

(Insert Figure 3 here)

This form of scientific thinking is being used in the field of psychotherapy research (Iwakabe & Gazzola, 2009) but is also very promising for psychoanalysis (Meganck et al., 2017). Given the long–lasting criticisms of 1) lack of generalisability in psychoanalytic case studies, and 2) statistically improper generalisations from observations in single case studies, it is important to clarify that the logic of empirical generalisation has been acknowledged by Freud and is present in his work, and that it significantly differs from statistical generalisation as well as the previously discussed forms of analytic generalisation and analogical learning.

The mode of thinking in cases as part of a population can be found in Freud's *A Child is Being Beaten* (1924). Already on the second page of this article, Freud began to develop an account of beating phantasies by referring to a group of individuals: "The individuals from whom the data for these analyses were derived were very seldom beaten in their childhood, or were at all events not brought up by the help of the rod." (p. 180) Immediately afterwards, Freud described the difficulty of formulating a hypothesis about beating phantasies because the individuals' responses about the nature of the phantasies were rarely specific and almost always varied from one another. Freud identified that, from all of the cases he refers to in *A Child is Being Beaten*, not one case is representative enough to fully characterise the phenomenon of beating phantasies (note the difference with the Schreber case where he did rely on one case as an exemplar to push forward the hypothesis about paranoia and homosexuality). Therefore, in order to formulate general theoretical claims about beating phantasies, Freud had to use six different cases of individuals with varying circumstances and diagnoses.

The six cases consisted of four females and two males, and were described at length diagnostically: two cases of obsessional neurosis (one extremely severe and other of moderate severity), one case that displayed individual traits of obsessional neurosis, one case of "straightforward hysteria" (p. 183), one case with no clinical diagnosis (could be dismissed as a 'psychasthenic'), and the sixth case was left undescribed. Freud's idea behind selecting these cases was to develop a concise theoretical account of beating phantasies by comparing the cases and studying their variations. In other words, Freud was not seeking to create a sample to study group characteristics as in statistical thinking, but to conduct a comparative study in which conditions under which beating phantasies occurred could be outlined.

As such, thinking in cases as part of a population involves working with cases that vary greatly in their situations, context, and experiences of the studied phenomenon. Whilst these cases are not used for generating a sample of cases, measuring average scores or the frequency of experiences, they are ideal for studying the variations under which the phenomenon occurs. This allows for testing different scientific hypotheses about the population of interest, as well as mapping out the impact and the relevancy of different variations (e.g., in Freud's *A Child is Being Beaten*, gender was the most important variation: the experience of beating phantasies for boys was not analogous to girls' experience). The thinking process involved in cases as part of a population is clearly aimed at generating a robust body of knowledge, in which the validity of scientific conclusions becomes greater the more similarities and variations are studied across a group of patients.

A contemporary illustration of thinking in cases as part of a population can be found in a case comparison study by Dahl et al. (2017) on transference. Their work is re–evaluating a result from an earlier statistical study, in which parental

countertransference was received positively by patients with high levels of personality pathology and negatively by patients with low levels of personality pathology. Dahl et al.'s study features two patients, Victor and Tim. Both patients were treated by the same therapist who reported high levels of parental countertransference. From clinicians' point of view, Victor presented a lower level of psychodynamic functioning than Tim; on self–rated measures, Victor's personality problems were also rated higher than Tim's. Going on the previous statistical generalisation, the parental countertransference was to be experienced disparately by Victor and Tim given the difference in their personality pathology levels.

What Dahl et al. find is that both Victor and Tim benefited from the therapist's strong parental countertransference. However, there were important variations in patients' receptivity of countertransference. The authors write the following about Victor's case: "What strikes us first is that Victor seemingly heard the transference work as an invitation to a new kind of relationship with a benevolent parental figure" (p. 471). Tim, on the other hand, experienced the therapeutic relationship as a continuation of his early parental relations. This is evident from the following expression made by Tim to the therapist: "I assume you want me to, kind of, take hold of my situation and go on with pride or something. But... I have to know that there is someone I can come and see if the anxiety attack is coming" (p. 472). In the limitations section, the authors note that findings at a case level do not indicate a generalisability. However, their study implies that a different generalisation could be made from the one in the earlier statistical study: parental countertransference can be received positively by patients with various pathology levels. Since the study only compared two cases, the authors stress that there is a need for many case studies looking beyond the statistics to provide some of the finer grained details and variations of the transference encounter.

Concluding comments

By drawing on recent developments and debates in philosophy of science and social sciences, our paper sought to offer a new perspective on the case study method and psychoanalysis as a science. We build on Forrester's idea of thinking in cases as exemplars and differentiate three modes of thinking in cases. We specified how thinking in exemplars for analytic generalisation can lead from knowledge of one in–depth case study to knowledge about a type relevant to many other cases; how cases as **exemplars** for analogical learning produce 'know–how' knowledge about vicarious clinical situations; and how cases as part of a population can be used for generalisation through the study of variation within the population. It is important to note that these modes of thinking are not new to psychoanalysis: we demonstrated that the three modes of thinking in cases are implicitly present throughout Freud's oeuvre (not just when he is writing about cases). Moreover, these modes of thinking are not specific to psychoanalysis, as they have been described in relation to other fields such as anthropology, educational psychology, psychotherapy, etc. By making these implicit thinking styles explicit, we hope to contribute to the development and enrichment of what has already been done in psychoanalytic case studies for over 100 years.

In this paper, we sought to demonstrate not only how Freud and contemporary psychoanalysts think and do psychoanalytic science through case studies, but also how thinking in cases differs from other kinds of scientific thinking styles. Although Forrester (1996) did argue that thinking in cases is a unique thinking style, he did not provide a detailed argument of how it differs from other thinking styles. Throughout all three modes of thinking in cases, we differentiated the reasoning process in Freud's case studies from statistical and experimental thinking styles. We concluded that, out of the

three identified modes of thinking in cases, none seek to arrive at direct replication or statistical generalisation. Therefore, applying statistical or experimental canons of verification onto psychoanalytic case studies is not appropriate because the two scientific thinking styles differ in both *how* (process) and *what* (end–goal) knowledge they produce.

It must be made clear, however, that we do not seek to immunise each mode of thinking in cases from criticism. That is to say, we do not believe that Freud's classic case studies (or contemporary psychoanalytic cases, for that matter) and their underlying modes of thinking should be exempt from scrutiny, even if it derives from other fields and their respective styles of scientific thinking. As pointed out earlier, Hacking's conceptualisation of self–authenticating thinking styles leaves much to be desired, and this can be clearly observed in our field. Accusations of self–confirmation and circular (or insular) self–authentication processes have haunted psychoanalysis ever since Freud began writing his classic case studies. As such, we would like to stress that simply describing a thinking style does not establish it as successfully self–authenticating.

Finally, the fact that psychoanalysis is based on what Forrester described as a scientific thinking style does not mean that it is by definition scientific. In fact, one of the criticisms raised against Hacking's theory on scientific thinking styles concerns the lack of clear demarcation criteria to distinguish between scientific and non–scientific reasoning styles (Kusch, 2010; Sciortino, 2016). For instance, according to Wayman (1982), a reasoning style that consists in making analogies between microcosm and macrocosm can be found in both India, Greek cosmology and sixteenth–century Europe (e.g. 'Man as the image of God', the Vitruvian man, etc.). This would not be considered a scientific thinking style anymore. Each thinking style has to develop its own canons of verification that provide conditions for truth, as per Hacking's (1992) definition: "There

is no higher standard to which [thinking styles] directly answer" (p. 13). Therefore, a further development to thinking in cases would involve developing such a canon of verification for all three modes of case–based reasoning. Mayer (2017) suggests that such a canon of verification might consist in the integration of the transferential and countertransferential dimension in case writing (reflexive objectivity). Willemsen, Della Rosa and Kegerreis (2017) have suggested a number of guidelines for the writing of case studies. Finally, we also discussed some of the work done by the European Psychoanalytic Federation Working Party on Comparative Clinical Methods (Tuckett, 2008) and IPA's Project Committee on Clinical Observation and Testing (Bernardi, 2014). We see all these developments as an attempt to, on the one hand, establish the relevant scientific canons for thinking in cases, and on the other, to be conscious of some of the self–authenticating (or self–stabilising) techniques that have been (or are still) used by psychoanalysts.

Another future direction would be describing thinking in cases as a scientific thinking style at all levels of psychoanalysis: the clinical reasoning process applied by practicing psychoanalysts, the learning process of students in psychoanalysis who learn through cases, the didactical approach taken by teachers in psychoanalysis who refer to cases as crucial resources, and the scientific process applied by psychoanalytic researchers who convey their findings in cases. Clearly, 'thinking psychoanalysis' entails thinking in cases in every corner of our field. It is therefore important that we seek to understand and develop how we think, speak, present, and write in psychoanalytic cases, and how we can do it truthfully.

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