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Narrative ordering and explanation ☆

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ABSTRACT

This paper investigates the important role of narrative in social science case-based research. The focus is on the use of narrative in creating a productive ordering of the materials within such cases, and on how such ordering functions in relation to 'narrative explanation'. It argues that narrative ordering based on juxtaposition - using an analogy to certain genres of visual representation - is associated with creating and resolving puzzles in the research field. Analysis of several examples shows how the use of conceptual or theoretical resources within the narrative ordering of ingredients enables the narrative explanation of the case to be resituated at other sites, demonstrating how such explanations can attain scope without implying full generality.

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1. Introduction: the conjunctions of narrative and explanation

Historians take it for granted that their narratives explain the events and phenomena in their fields, and hold an unstated intuition that such narratives focus on events in time. Scholars of narrative too, provide definitions of narrative that are determinedly sparse, even reductive, yet all depend fundamentally on a notion of passing time.[1] And while narrative scholars are not interested (apparently) in explanation, some hints of explanation are present by default, for the one thing they seem to agree on is that a 'chronicle' is not a 'narrative'. Chronicles order events through time, but imply nothing more about the relations between them. In contrast, narratives, not only order through time, but imply, delicately or directly, relationships between such events. For example, the chronicle of the female monarchs of England/Britain: Mary I, Elizabeth I, Mary II, Anne, Victoria, Elizabeth II, can be contrasted with the implicit assumption of connection that marks a narrative: The Queen died, the King came to the throne, and the Princess ran away. Such relations might rely on dependency notions, might implicate influences or causes, or might involve contingencies: those three elements which often appear in historians' use of narrative.

For historians, narratives explain how things happen and why things happen, not apparently so far from the tasks set out for science, and indeed, in some sites of science, scientists use the narrative form of explanation in their scientific work. This immediately raises the question: do narratives in science work in the same kind of ways as narratives in history, or as narratives generally? There are certainly those who doubt that narratives can be explanatory in science. In the mid-20th century, philosophers of science (Hempel, 1965) took it for granted that history was not a science (in their terms): there were no laws in history, and historical narratives could only be, and were only, about particulars - so could not offer scientific (law-based) explanations. More recently, philosophers of science have taken a different line: explanations are given as answers to 'why-questions' (van Fraassen, 1980), opening the door to mechanistic and causal kinds of explanations in the sciences (see Crasnow, in press, and Beatty, in press), but not from thence to history. Just as chronicles remain an outcast for narrative scholars, so history, and its explanatory narrative mode of argument, remains an outcast in the broader kinship of the sciences.

Yet scientists, for some kinds of phenomena, and with some ways of working, regularly use narratives and the task in this paper is to explore, and to characterise, the ways in which narratives work in such scientific locations as a form of explanation. The argument begins here with the claim that what narratives do above all else is create a productive order amongst materials with the purpose to answer why and how questions. Novelists pick out particular events, particular relations, and order them to create a gripping story; their question-answering or problem-solving nature is of course most evident in detective stories. Similarly, historians pick

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[1] Definitions abound within the immense literature on narrative that stretches beyond the fields of literature into law and philosophy: recent surveys from the narrative field are found in Abbott (2008) and Herman (2009).

out particular facts, particular events, particular relations, and order them to create a narrative account in answer to historical questions or problems. And while both narrative scholars and historians have seen time as the dominant line upon which these elements are woven together, the important umbrella notion here is not time but ordering, for which time offers a very convenient metric, a metric which may disguise other ordering principles. It is the ability and facility to order materials and weave them together to form explanations - regardless of whether the warp is a time thread, or a space thread, or a theoretical or conceptual thread - that characterises narrative.

Consider again the 'Queen, King, Princess' narrative example given above. The sequence of events is typically read as happening through time, though it could have happened more or less simultaneously. Less ambiguous is our tendency to read into the order that these events are related to each other in which the Queen's death seems to be the critical factor for the actions of the King and the Princess. Re-ordering events creates a different story: the King came to the throne, the Princess ran away and the Queen died makes the King the focal prompt for the events. The ordering is critical to the narrative's interpretation, and whether it is genuinely a time ordering or not is less critical. Scientific examples of this ordering issue abound: It might be that the important points in explaining the behaviour of someone in a psychiatric case study is the behaviour of their parents; time itself is not the dominant ordering line but a hook for narrating those other reasons. Similarly, the extinction of dinosaurs found in the fossil record happened in time, but the dominant evolutionary factors that explain that extinction are not fitted to strict units of time: that extinction could have taken a longer or shorter time. Some narratives do dance to units of time: circadian rhythms, or developmental processes from egg to caterpillar to chrysalis to moth (see Terrall, in press). But time is more often a marker of events than a driver of events, and oftentimes it is not even so important as a marker, but rather the material in which we see the dependency of relations or the unfolding of events. That being so, the basis of narrative in the sciences is not time per se, but the possibility of being able to order events—to pick out a set of relevant elements and put them into order, that is, into relation with each other.

The implications that narrative ordering and practices have for explanation requires further argument. This account is prompted by considering the reasons for the Cinderella status both of history in the sciences and of chronicles amongst the narratives, and by wondering if those exclusions provide productive materials for understanding the role of narratives in the sciences.

* *Narrative is not chronicle*, because its principle of ordering involves not just time sequencing, but connecting, and this connectedness is required for claims about narrative's explanatory function in science. It may depend for this dominant ordering device on time or some other thread, but it must also involve some elements of relationship: causes, processes of change, puzzle solving, etc. And the resulting narrative may represent evolutionary paths, the unfolding of development processes, identity formation, the integration and synthesizing of elements, or creation of a mosaic/jigsaw - but not just a listing of order.

* *Narrative science is not history*, because it deals in various ways with more than particulars.[2] It develops or invokes categories, concepts, theories and other generic kinds of materials which are germane in giving an account of phenomena in any specific scientific site and context. This combination of generic and particular

is evident even in the briefest scientific examples given above, and will become better attested in the case materials discussed later.

Scientific narratives focus on the reasons how and why things happen, whether these are ordered through time, or along some other perspective. Thus, it is the ability of the narrative scientist (as for the novelist or historian) not merely to order their materials, but to do so in answering how or why questions that lies at the heart of narrative, and thus the possibilities of narrative explanation in various sites of science.

Narrative forms of explanation have ontological implications, and perhaps involve novel epistemological principles. These are not necessarily evident a priori, nor necessarily shared across those sites of science where narratives are used, for neither narrative nor science should be considered standardized categories. Rather, narratives occur as a form in which things become known, and as a means of explanation, in various different sites of science. The fertile territories are not only the obvious ones: natural historical sciences (evolutionary biology, palaeontology, geology), but also the case studies of medicine and the human sciences, along with accounts in the complex natural and social sciences such as ecology and sociology. More surprisingly they find ready space in making sense out of mathematical simulations in the natural sciences and economics, in giving accounts of chemical reactions, and in counterfactual approaches in political science.[3] These are sites in which scientists get to know things via narrative, not because the narrative provides an illustrative example for theories or models or something else, nor because it is 'merely' rhetoric (though rhetoric is never 'mere'), but because narrative is how the relationships amongst their materials become known to them. That in turn suggests that the narrative form of explanation reveals or evidences ontological commitments about the nature of the scientific materials at hand - that they are evolving materials, or complex materials, or synthesized materials, and so forth.

Questions of epistemology offer a more evident terrain: how do scientists construct their narratives, and so what kind of ordering principles do we find at work in scientists' narratives? Is there a methodology and epistemology of narrative science, or are there perhaps several? In order to consider these questions about epistemology in a more specific way, I discuss the narratives of social science case studies, rather than more obvious candidates from the natural historical sciences. This means starting with the most difficult sites because these case studies do not have any of the obvious features that are assumed to characterise narratives and that are found in narrative definitions. That is, they don't have obvious beginnings, middles and ends; they don't necessarily have time as the main dimension; nor do they have obvious causes, contingencies or changes of state. Rather, they offer documentary reports from the field as narratives which meld multiple small stories and commentaries, and multiple perspectives within the narrative, and they usually involve generic or conceptual elements in order to tell particular narratives. Analysis of four examples of such case studies will figure in the course of this paper (other cases appear by way of further illustration). The first two cases are sociologists' community studies from the 1920s and 1930s, the third case is a late twentieth-century study from industrial economics and the final one is a post-WWII classic of anthropology. Different community norms mean that these scientists differ in the ways they deal with and analyse their materials, and in the ways that

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[2] Historians will argue this too in so far as they deal in generic categories such as war, revolution, class, and so forth, but see Roth (in press) who disputes this.

[3] See Wise (2011, and in press) for examples of narratives and simulations from physics; Morgan, 2001 and 2007 for examples from economics; Crasnow (2012 and in press) for narratives in political science; Rosales (in press), Terrall (in press), and Currie and Sterelny (in press) for natural historical sciences; and Hurwitz (in press) for medicine.

they tell their narratives. Nevertheless, we can define the same characteristic ways in which those scholars create order in their case-study materials and provide the joined-up accounts found in narratives, regardless of their field.

2. Configuring

Let me begin this account of how scientists order their materials by looking not to general philosophy of science or narrative studies, but to philosophy of history. Louis Mink (1970 and 1978, p 129) introduced the term 'configuring' to define the characteristic way in which historians worked with their materials - not just putting them in order but showing how they relate together - to achieve historical explanation:

> An historical narrative does not demonstrate the necessity of events but makes them intelligible by unfolding the story which connects their significance (Mink, 1970, p 545).

For Mink, the notion of explanation coming from such a 'configurational account' stood in contrast with two other forms of explanation, namely the 'theoretical mode' of explanation which involved laws (scientific explanation) and the 'categoreal mode' which involved fitting an element or object into a class or category or under a conceptual framework (as in philosophy). Configuring refers to a means of 'ordering' the elements to fit together, and from that being able to 'grasp the whole' together as in grasping a 'career', that is, making sense of the whole.[4]

Mink's useful notion of configuring needs to be fitted out with additional elements if it is to be appropriate for these social science case studies. First, the ordering mechanisms for narratives need to be teased out, contra Mink who argued that there were 'no *rules* for the construction of a narrative' 1978, p 145). And secondly, to make these valid scientific narratives, these ordering principles are likely to incorporate conceptual or abstract or general elements from a scientific field (that is, they need to allow elements from Mink's 'theoretical mode', or even the 'categoreal mode').[5] The ways these conceptual elements fit into the ordering principles find parallels in the visual arts in which, of course, representations without time predominant, and some genres of which incorporate conceptual elements.

I begin with two straightforward elements to set up the analogy. First, paintings, like narratives, generate or define their own space. Both artists and scientists choose what to depict, place boundaries around those materials, and offer internal frames within. In social science case-study research, the narrated community is bounded by place, time, and question/topic/theme of the research (see Morgan, 2012). Within these frames, the scientist brings together all the elements that fit under their chosen topic of study. Sometimes, these boundaries and their contents are quite easily determined by the materials, such as in the case study of a 24 h radio fund-raiser in WWII (*Mass Persuasion*, Merton, Lowenthal, & Curtis, 1946). At other times, the material is more difficult to bound, as in the study of a slum community (*Street Corner Society*, Whyte, 1943),

which could easily have developed materials in more directions and opened up further themes.

Second, both media - paintings and narratives - also provide possibilities for multiple perspectives. Artists do not just offer optical perspectives to the viewer in their handling of land and city scapes; they also choose to depict the relationships of those things pictured to each other by means of internal perspectives indicated by the gazes, shapes, and relationships of their figures. Social scientists also take a particular viewpoint, using a conceptual or theoretical 'lens' to observe their materials and shape the development of their narratives, but they too use parallel techniques in creating internal perspectives to configure the relationships within their field. For example, a classic piece of anthropology (*Deep South*, Davis, Gardner, & Gardner, 1941) used ethnographic techniques to elicit subject-based judgements of the class and caste structure of the 1930s deep southern USA - thus revealing what each segment of society thought of the others presented within their overall narrative in a hierarchical tabulated structure. The authors also found ways to present in perspectival form (a graph, in two-dimensional space), the various cliques within these castes and classes, and their overlapping memberships in that society. Society - by caste, class and clique - was configured in these processes.

These two initial points about how painters order the materials in their pictures provide the starting point for understanding how narrative ordering or configuring works in the social sciences. Such narrative ordering can be understood to take the same two broad forms practised by painters: *colligation* - bringing things together and bounding them in one field; and *juxtaposition* - making use of alternative perspectives, both as ways to configure the case narrative.

2.1. Configuring by colligation

The term colligation is not a common one, but the notion of ordering it brings is well demonstrated here - in the visual analogical materials that I suggest are helpful - in Pieter Bruegel the Elder's painting *Children's Games* of 1560 (see Fig. 1). The title is innocuous, but already suggests that more than description is involved. The picture depicts a Dutch landscape that ranges from urban to rural across the canvas. Arrayed across every spare bit of the free ground (that takes up more than half of the canvas space) are children playing games, not all playing one game, but gathered into little groups playing all sorts of different games. Each little group is an island unto itself, there is no interaction, they are not ordered in any obvious hierarchical or categorical way other than being brought into one place, though the viewer could, with ease, see that there are ball games, throwing games, hoop games, and so forth. The concept for Bruegel's picture is children's play, and the phenomena assembled are the various different children's games. His other pictures of the period that fit in this genre portray 'Winter Games', 'Dutch Proverbs' and 'Justice', offering - in many small sectioned examples - closely observed bits of life fitted under a conceptual title.

Breugel's pictures capture what I have in mind in this first kind of narrative ordering, and I use the term colligation because it has a number of meanings resonant for narrative ordering in the sciences. The online OED suggests several definitions.[6] The first set refers to making connections, a 'material binding together', a conjunction or alliance. Neat, also for my purposes is that it is a term of inductive logic from the mid nineteenth century referring to the gathering together of facts and their relationships to

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[4] The notion of a 'career' has connotations of a time domain ordering, but Mink was here aiming to move historical narrative away from a narrow view of the time elements, to get at the view from above, not the view of passing of events (see Beatty's discussion in press).

[5] Mink argued that these modes of comprehension could not be reduced to each other, but my analysis here suggests that scientific narratives may embed reference to theoretical terms (which suggest links to covering law modes of explanation) and to conceptual terms (which relate to the philosophical mode of thinking), but without being reductive to either.

[6] http://www.oed.com, consulted 4th December 2016.

Fig. 1. Pieter Breugel, Children's games.
Kunsthistorisches Museum in Vienna.
https://www.google.com/culturalinstitute/beta/asset/children%E2%80%99s-games/CQEeZWQPOI2Yjg?hl=en.

concepts, flagged in William Whewell's writings in philosophy of science: "The conceptions of our own minds, and the colligation of observed facts by the aid of such conceptions; " while the historian, jurist and social scientist Henry S. Maine in 1861 refers explicitly to "the colligation of social phenomena". Finally, a meaning from linguistics refers to "members of word classes related to each other in syntactical structures", thus capturing something of the grouping and categorizing elements implied by the term. As a form of ordering then, I use colligation to capture the way a scientist both brings together, and assembles, a set of similar elements framed under some overall guiding conception, or categorization schema.

Configuring by colligation is exactly what happens in the narrative *Middletown*, an urban sociological-anthropological study of a middle American, mid-sized, town in the 1920s (Lynd & Lynd, 1929). It develops a portrait of contemporary American urban community life, subdivided into accounts of work, home, education, leisure, religion, and community activities, and it provides a historical dimension to how each of these aspects of life has experienced changes over that of the previous generation. This description does the study less than justice, for it contains accounts of new consumerism, of new ways of working, indeed, of what it means to be young and 'modern' in such an environment in contrast to the lifestyle of its parent and grand-parent generations. Its account of the residents of the town, described and categorised in their various activities, was taken to represent both the average and the variations of behaviour, attitudes and opinions to be found amongst such urban Americans. It is both closely observational and so descriptive, but also analytical in social science terms for the ways that it assembles, groups, and categorises within each category.

Middletown's narrative of middle American's urban life is like Breugel's picture of children's games - it provides a rich and enticing portrait, a dense picture of life in middle America. This social science case study proved valuable and convincing in two senses. First, it provided a snapshot knowledge set of 'average'

Americans used by many in the society of its day (Igo, 2007), and by historians later. Indeed, it quickly became exemplary in the sense that *Middletown* came to represent 'middle', urban, America: the average town. Second, the study also created a model for doing urban community studies, and how to create a rounded picture of an urban community. Yet, it was also limited in a particular way. Ordering by colligation here involved dividing and bringing together, classifying and categorizing, the social experiences of the towns-people to show how the community was ordered. But it did not explain what made it ordered in that particular configuration nor what held those activities of life together and made the community cohere. The kind of relational work that showed how these categories of living were interwoven and linked together was missing. Just as Breugel's children played games in small independent groups, the overall narrative of life of *Middletown* remained determinedly and strangely, patchwork.

Coherence making via colligation brings things together, organises the materials, and frames the whole; it suggests categories or divisions - using internal borders - that go to make up the whole. Processes of colligation do not in themselves raise questions and offer answers and so configuring by colligation does not in itself create the internal resources that create 'explanatory narratives'. The ordering or configuring of *Middletown* did not set up questions and present puzzles; there were no questions to resolve, and no answers because no questions. Thus, *Middletown* itself produced an important and *exemplary case*, but there was and is no 'Middletown narrative', no exemplary account that sorted out puzzles in urban societies in such a way that the narrative account could travel to studies of other urban areas so that they might then, in turn, be described as 'a case of Middletown'. This is in sharp contrast to a case that comes later, *Street Corner Society*, which did provide an *exemplary narrative* in explaining a puzzle about the ways of urban slum living, and carried conceptual or abstract resonances to apply in other urban community studies.

2.2. Configuring by juxtaposition and puzzling

The solution of puzzles is a critical element of Paul Roth's (1989) recipe for understanding how narratives explain in history and ethnography-based human/social sciences. "Narratives explain, on this account, by providing stories as solutions to problems" (Roth, 1989, p 469). But Roth largely leaves open the problem of how this works. How are the ingredients of a narrative ordered to raise questions and solve them? How does narrative ordering work to create problems or puzzles and so operate as the housing for individual concrete case explanations?

For this agenda, much more significant than processes of colligation, are the processes by which contrasts and differences are raised within the narrative. Stephen Turner (1980) argues that sociological explanations are 'translations' - they arise from comparisons which raise puzzles.[7] Such comparisons may be implicit, stemming from the contrast between the sociologists' own taken-for-granted experience and those found in their research site. And while Turner's 'translation' argument is about sociological explanation, it might well be indicative for anthropology too which uses case work as its modus operandi. Such comparisons may arise for other reasons; in economics for example, they may by prompted by a lack of fit between the assumptions of a theory compared to the reality of life on the ground. But it remains unclear why answering such puzzles prompted by comparisons would create narratives as a way of resolving those puzzles. Narratives are not the only way of answering puzzles, they are one way of doing so. Perhaps the key comes not from the methodological approach of any one social science field, but rather from the empirical problems of case study work.

Easy comparison is not there for the taking in case study work, because what is found in the field of study are not simply facts, observations or phenomena, let alone ready-made descriptions of phenomena awaiting the social scientist's re-description, but something much less obvious. Clifford Geertz, as anthropologist, described the problem thus: the field presents the social researcher with a knot of puzzles:

> a multiplicity of complex conceptual structures, many of them superimposed upon or knotted into one another, which are at once strange, irregular, and inexplicit, and which he must contrive somehow first to grasp and then to render (Geertz,1973, p 10).

Grasping and untying the complex is one thing, but it must then be re-ordered and rendered into something that makes sense out of the puzzles and confusion. The social scientist faced with this confusion uses their conceptual and theoretical gaze to unravel and then to order the disparate materials presented in the field. That is, case study work in social sciences is a mode of enquiry that most fruitfully focusses on the exploration of puzzles within a single case, not on re-describing materials to fit a general hypothesis or theory. Puzzles or confusion in science do not necessarily lead to narrative solutions: for example, if the confusion existed in a large data set on one phenomenon (eg statistics on death rates or business cycles), processes of pattern-making rather than narrative ordering might be required. But the scientist here is faced with many different pieces, even kinds, of evidence that must be ordered

into sense.[8] Narrative is the natural solution form here to puzzles presented by disparate materials, not just because there are typically many different elements to be ordered, but because it is the retying that counts: it is retying the elements that puts them into relation to each other (remember, a narrative is not just a chronicle).

Putting elements into relation to each other when they appear in opposition is the key here. To return to the analogy: questions are raised in visual arts by making internal framings and perspectives that offer juxtapositions. The same is true in social science case studies, and once raised or recognised as such, the scientist uses methods of analysis and abstract concepts or theories from their scientific subject field to analyse the case evidence and so to provide answers or solutions to those questions. So, this alternative process of configuring comes not - as in colligation - from locating separate or isolated elements that might naturally fit together, but rather from understanding that many elements initially presented in the social field don't appear to fit together. That is, the elements of social research are already found in juxtaposition, and are therefore ordered so in the narrative - presenting a kind of puzzle that has to be unravelled. But because they are found in the same social field, they give the social scientist good reason to think that they should fit together - in some way or other - rendering disparate and even oppositional matters into a narrative explanation. Easy consistency, easy coherence-making, here is not a virtue. Easy consistency in any case is rarely possible.

I turn to two visual forms that use juxtapositions as a parallel to illuminate the ordering activities of social science narratives.[9] These comparative visual examples indicate the means by which the particularities of the site elements are constituted as puzzles by the use of generic and thematic or conceptual materials. Their usefulness will become fully apparent in the social science case discussions immediately after.

Juxtaposition is the kind of configuring process that is best demonstrated in the visual fields by the genre of 'emblematics'.[10] Multimedia 'emblems' appeared in European visual and textual culture in the early modern period. The literature on them is considerable, and there is much detailed argument about the genre, but there seems to be agreement that the usual elements to be configured - a visual part, a textual part, and an inscription - were brought together to create puzzles to be solved. As with much of early modern culture, the implications of the elements are not immediately obvious to us now, but they were not supposed to be so even then. They were purposely created to provide an enigma which had to be puzzled out, for the meaning of the interactions and intersections of the elements were hidden. That is, the juxtaposed elements had to be made to 'speak to each other' in order for their separate elements, and their combination, to be made relevant to the explanatory title and thus to speak to the viewer.[11] Puzzling out these emblems was a project for the educated (rather than the noble) elite. Commentators also suggest that it is a feature of these emblems that they involved two general levels. First they possessed conceptual materials amongst these separate puzzling elements, and secondly the solution to the puzzle spoke to

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[7] Turner's argument is a more general one about sociological explanation and not specific to narrative modes or case study work.

[8] Case studies are often thought to suffer from the problem that n = 1, and thus inferior compared to statistical work for justification purposes, but in fact, in evidential terms, n = many, but many different kinds of observations, not many different observations of the same kind (see Morgan, 2012).

[9] I am prompted by Geertz's astute remark that the "line between mode of representation and substantive content is as undrawable in cultural analysis as it is in painting" (1973, p 16).

[10] Amongst a considerable literature (including a journal dedicated to the genre: *Emblematica*), the most relevant sources here are Bath, 1994, Russell, 1986 and 2009, and Stafford, 2008.

[11] Ashworth (1996), in one of the few uses of this notion in history of science, shows how that this 'emblematics' form of gathering together different kinds of information to shed light on a phenomenon was symptomatic of some early modern natural history.

a general point (specifically in comparison with the contemporary individual 'devices', designed to project an individual's character, with an individual motivation, at a specific point in time). So the generic qualities that emblems possessed had ideational or conceptual qualities.

The idea of an emblem makes more sense with an exemplar, dating from 1515 and titled very plainly "Prudence" with an accompanying representation (the text in this case is missing, see Fig. 2). The visual elements are several: a mediaeval lady (apparently in mourning - see Russell, 1986) with her hands resting on a mathematical compass and a shield showing scales, probably scales of justice since there is a crown over them, a stag in the nearby forest with a crucifixion figure on its head, and so forth. We don't need to know much of early modern culture and its symbols to recognise both Christian icons and the presence of justice and perhaps something about measuring. Notice that despite the particularities of the visual elements, they all allude to conceptual elements or ideas associated with various cultural resources, and that many of these elements also signify several possible different things. But the most important point is that their combination presents an overall enigma - it is in itself a peculiar assemblage, and it asks the viewer: What do those individual icons or emblems have to do with the title: Prudence? It is in figuring out the answer to this puzzle that explanation happens - a recognition of something conceptual or ideal in the sense of 'prudence', but with new attributes.

A different genre of paintings of the same period is found in domestic scenes from the low countries. These are not in themselves puzzles, but they raise questions by the juxtapositions of the figures and their attributes and actions, thus drawing attention - within the ordinary domestic scene - to important matters of life (see Woodall, 2014). Here, the exemplar is by Quentin Matsys: *The Money-Changer and his Wife* (from 1514) - showing a bourgeois money changer weighing his valuables and his wife looking on with her hand holding open a holy book (see Fig. 3). The obvious juxtaposition between money and religion is located in, and focussed on, the major characters which, at the same time, depict the relations between husband and wife, framed against a domestic wooden set of shelves. The juxtapositions are deepened by the different perspectives of contemplative gaze of the two main figures, and on the two inset frames, one the holy book which holds a religious picture, and the other, a mirror reflecting (from the hidden side of the room) a further figure (maybe in prayer) and beyond that a window with a cross division in the panes and church spire beyond. A further inset internal window behind the main figures reveals a chamber (or possibly the outside) showing two further figures engaged in argument. This calm, almost stationary, scene of domesticity nevertheless deals with some weighty issues that are represented in ways which suggest degrees of difference on the personal level and on the abstract level (even for those knowing little of the historical context of the painting). These kinds of pictures raise questions without necessarily providing the materials for answering them - their configuration rests on a series of juxtapositions or disjunctions which indeed seems to be the aim of the representation.

These two genres are question-raising pictures: emblems have been described as 'speaking pictures' (Bath, 1994), and the low country domesticities as 'thinking pictures', terminologies which immediately point to their function rather than their subject.[12] That is, they are not conventional 'story' pictures, which aim to capture the critical turning point in a narrative that is already known to the viewer (such as Susanna and the Elders, or the history of Ulysses).

Fig. 2. François Demoulins, Traité des vertus cardinales. | Gallica. Bibliothèque nationale de France.
http://gallica.bnf.fr/ark:/12148/btv1b6000782z/f15.item.

They are not paintings re-describing known narratives, parables or allegories. Rather, even when the iconography of the individual elements is known, they offer puzzles for the educated to unravel, or pose issues for contemplation, and reflection, for the viewer. These puzzles are not just raised by the choice of elements involved, but are equally in the juxtaposition devices such as their placing, the use of perspectives and internal framings. And crucially, they embody - at their heart - conceptual categories and materials.

My project here is not to unravel the puzzles in these pictures,[13] but to take the ways that these kinds of pictures raise puzzles as analogical to the way that narratives do the same kinds of work in social science - namely by framing, creating perspectives, marking juxtapositions, and so forth, and how they contain conceptual and abstract elements from their sciences. I take a further three social science case study examples here (following the first example *Middletown*) to show how this configuring by juxtaposition works to create questions and resolve puzzles within the narrative.

My second example is of a classic social science urban narrative: *Street Corner Society* by William Foote Whyte (1943). This account offers a strong contrast to *Middletown* (researched a decade earlier) and shows how both Turner's and Geertz's accounts of puzzling are relevant. Whyte set out to study and to understand a group of young men, a male street-corner group, in a slum area of Boston in the depressed 1930s, yet he came from a Harvard fellowship, and surely experienced Turner's issues of comparison. But, as Geertz

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[12] The terminology comes from Joanna Woodall at the Courtauld Institute of Art in personal discussions.

[13] On "The Money Changer and his Wife", see Woodall, 2014; on "Prudence", see Russell, 1986.

Fig. 3. Quentin Matsys, The Money-Changer and his Wife.
Musée du Louvre, Paris.
http://www.louvre.fr/en/oeuvre-notices/moneylender-and-his-wife.

would have expected, he was also quite mystified by the behaviours he observed (according to his autobiographical accounts) and relied on the guidance and friendship of those in leadership in the corner group about what was happening.[14] His narrative illuminates my account of configuring via juxtaposition. His recipe for unravelling puzzles and rendering answers consisted in raising a series of framing contrasts: different behaviour within the group by different members under different circumstances; between the ill-educated and impoverished street corner group and a group of better educated and better-off young college men; between the group's relationships with racketeers compared to those with the police; and the two different groups' (corner and college boys) contrasting relations with the agents of the political machine. These juxtapositions are plainly and concretely treated and appear as a series of mini-narratives each one raising and explaining questions of group and individual behaviour.

But there is also a broader narrative, an overall solution to a bigger puzzle, for the case narrative ends up in a dramatic claim, an about-turn indeed, to the way that sociologists of the day understood and labelled slum communities. Sociologists of the day understood slums as disorganised places, indeed, not a society at all. Whyte was happy to admit that "corner boys and college boys have different standards of behaviour and do not understand each other" (Whyte, 1943, p 272—3), and that there was a generational clash as well. But just as clearly, he argued that this community was an organised society:

> The story of Cornerville has been told in terms of its organiza-
> tion, for that is the way Cornerville appears to the people who
> live and act there. They conceived of society as a closely knit
> hierarchical organization in which people's positions and obli-
> gations to one another are defined and recognised (Whyte, 1943,
> p 269).

His definition carries, in its own stark juxtaposition, both the puzzle and explanation in one sentence:

> Cornerville's problem is not lack of organization but failure of its
> own social organization to mesh with the structure of the so-
> ciety around it (Whyte, 1943, p 273).

The third example is a case study in economics on 'exit': the behaviour of firms leaving a declining industry, where the economists' strongly-held assumption is that firms will always exit in an order that begins with the least profitable first: that is, exit is assumed to be 'efficient'. Charles Baden-Fuller's (1989) study of exit of firms from the declining steel castings industry in the UK in the 1980s found that this order of exit was not as predicted by the theory: more profitable firms exited before less profitable (even loss-making) ones, creating an immediate puzzle. The case study research used a variety of techniques: game theory, economic models, statistical work, ethnographic and accounting techniques and qualitative and quantitative evidence. There were no simple or obvious answers in the sense that an explanation for the evidence could be umbrellaed under one formal model or found by one social scientific method of analysis. Instead, the research process juxtaposed - in a series of comparative moves - the financial means of the firms, the type of ownership, the degree of ownership diversification, and the size of the firms. This configuring process unravelled the knots in the materials and the case narrative retied these to reveal a complex set of interconnected dependency relations and so reasons for the observed pattern of exit. A narrative explanation emerged of loss-making, owner-managed, un-diversified, firms that hung in the industry well after the profit-making, conglomerate firms that were not owner-managed had left - *because* the costs of exit were too high (in both real money and emotional terms) for those loss-making firms to be able to quit. The narrative unravelled the factors for the puzzling behaviour, knit them all back up to show how this contra-to-theory behaviour was explainable, providing answers to the why questions (flagged by the 'because' phrase above) in ways understood by the economics community.

For the fourth case, I turn to Geertz' famous "Deep Play" essay on the cock-fight in Balinese culture (1972). Roth (1989) provides an illuminating analysis of this famous essay and recounts how the latter's explanation works by locating something deeply puzzling about these cock fights, formulates it as a problem, and then solves it - all in a narrative. My account here complement's Roth's analysis by showing exactly how juxtaposition as an ordering device works to formulate these puzzles in Geertz's narrative. Like most anthropological accounts, Geertz begins by situating himself as the story-teller in the alien culture with a vivid example of the particular event to be analysed: a village cock fight. The account proceeds by first giving a base level description of such events and the betting that this involves. But that description immediately raises a knot of puzzles for Geertz, which he points to by treating them to a Benthamite utilitarian analysis (a juxtaposition, but also a Turner translation moment). In doing so, he raises a why-question: Why do these Balinese men gamble in a way which utilitarian analysis - the standard western calculus of rationality - suggests is irrational? Geertz appears to purposely introduce an alien cultural framing to pose his question, knowing that this framing will immediately be found wanting, yet also knowing that it is just because it won't fit that it will act as a reflective device to reveal what is happening in the community he studies. Indeed, it is this juxtaposition that serves to open up the many different aspects of the puzzle and prompts the next set of framings: a host of questions about the level of betting, the odds in the principle and side betting in relation to civil status of the participants, and to the quality of the

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[14] Both Turner's and Geertz's points come out clearly in the 'Appendix' that Whyte wrote for the second 1955 edition of his study. See Kohler (forthcoming) for a discussion of Whyte and his field project.

cockerels that are fighting. Taking these several frames together, he succeeds in explaining the betting of the entire community in relation to individual status and to family allegiances within the community or between communities.

But whilst betting - in its various aspects - is posed in Geertz' account as the principle immediate puzzle for the anthropologist to unravel, the event as a representation of Balinese culture remains to be framed, for that critically important puzzle is left open. What these various explanations reveal - pointed out almost with surprise by the author - is the puzzle of why the outcome of such fights, and the associated betting with huge gains or losses of money, seem to be almost without consequence for those involved. This last is an important question because the previous solutions to previous questions and answers in the narrative have been framed by Geertz in terms of the status of the individual men in that society. Why do these events, which occur, regularly and everywhere in Balinese society, and which seem likely to have very substantial consequences to individuals' status nevertheless appear to have no such consequences in the community? In other words, all those framings were but internal to the main problematic, to be unravelled - explained finally as 'deep play', the title of the piece, referring trebly to the level of betting and odds, to the ritually dramatized quality of the cock-fighting events, and to the final interpretation that these are games, like children's play, without serious consequences. This is play all the way down.

A first-cut analysis of these three examples - street corner society, industry exit, and cock-fighting - in terms of social science narratives akin to thinking or speaking pictures will note that, like those pictures, these social science narratives all rely on generic and conceptual elements that are deeply embedded in the narrative description and case analysis. Geertz as anthropologist uses kin, ritual, and status; Baden-Fuller as economist uses profits, maximising, and efficiency; Whyte as sociologist uses small group behaviour, leadership, and community. Different perspectives are taken to make different cuts through the materials: those of college boys versus corner boys, of owner-managed versus conglomerate-owned firms, gamblers of small worth versus those of big worth. Framings first act to juxtapose, even to discompose, rather than to prompt initial coherence amongst the particular materials in configuring the narrative. Juxtaposition as an ordering device creates narrative depth and scope, both in descriptive terms and in analytical terms.

We can also see more clearly in all these three social science case studies how the puzzles are created from the series of juxtapositions which still depend upon, and are prompted, by the internal resources of the case, and then how they are solved by social scientific enquiry and how the narrative form provides the answering analysis. This is a qualitatively different kind of configuring process than the framing and bounding of colligation found in *Middletown*; these other case materials are initially more obviously knotted, and the ordering process depends upon using those knots to create why-questions out of the materials. It is in getting such disparate materials to cohere and in rendering answers to the puzzles in narrative form, that explanations are given. Now clearly, the elements that are juxtaposed in these social sciences are not visual emblems, inscriptions and verses. But we have the same process of juxtaposition being used to reconfigure understanding and knowledge by challenging the author and reader to understand how apparently unrelated or inconsistent elements nevertheless have relevance to each other, and so how they can be brought into narrative coherence, using a more conceptual level. The presence of these conceptual elements is very important to the way that case study narratives are used in the social sciences, to which I turn.

3. Narrative explanation and the possibilities of case study knowledge to travel beyond the case

Configuring processes are ones that make things cohere - a process of making things fit together, as in detective or forensic case work, be it fictional or factual. This notion fits neatly with the criteria of consistency, coherence and credibility that are thought to be the hall-marks of narratives that emerge from the construction of legal cases, and before that, in detective work. That is, such narratives emerge out of the processes of making an account that is consistent with all the evidence, that offers a coherency within that account, and that has some explanatory credibility (MacCormick, 2005).[15] In the case of social science narratives, that explanatory credibility is usually cached out in terms of agency and institutions in the individual and social realm. While the processes of colligation may be sufficient to develop narratives that pass the first and second criteria of consistency and coherence, the ordering processes of juxtaposition relate more nearly to satisfying the second and third criteria of developing coherence and credibility. But juxtaposition, as discussed here, introduces a fourth criterion for narratives in the sciences, namely of puzzle solving, so that justifying the claim that a case study offers an explanation of the materials requires that the narrative ordering works both to problematize and to solve the questions in the case. Once again, too easy coherence or credibility may not be virtues for satisfactory explanation in the sense that an explanation requires a puzzle to be solved, that is, it requires an initial incoherence or lack of credibility.[16]

The three social science cases discussed immediately above - the slum community case, the industry exit case, and the gambling society case - all used juxtaposing modes of ordering in their narrative, and shared the aim of explaining puzzling or even paradoxical aspects of a society or an economy. It would seem obtuse to suggest that the narratives of these case studies did not explain anything when clearly for the researchers who conducted them and the research communities who received and used them, they offered explanations in a quite straightforward way for the puzzles in their particular cases at hand (just as a historian will take it for granted that their narratives aim to explain the particular events of their history). So, creating consistent, coherent, credible and puzzle-solving narrative answers to questions provides particular explanations for the problems outlined in particular cases. But how far do these single case narrative explanations carry any more general wider writ, and do they provide extensions to other particular cases?

Recall that Roth (1989) argued that "narratives explain … by providing stories as solutions to problems" but he did so in the context of arguing that if those narratives are to count as explanations they must enable extensions:

> Paradigms are solutions to problems posed by concrete phenomena; they are answers to puzzles. As solutions, they become

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[15] Of course not all scientific narratives involve such evidential elements, so consistency may not be a relevant, or not so strong, a criterion.

[16] This criterion is consistent with the mode of 'not infirming' which I have argued is one way to think about how case study accounts are given internal validity (see Morgan, 2012, based on Campbell's ideas of 1975): a case narrative has to be consistent with all the evidence, and any bit that does not fit 'infirms' the account. Puzzles arise from recognition that there are bits that don't fit, so that the narrative still needs to be attended to. The criterion of fit between a narrative account with all the evidence for one particular case appears to underpin the work of those creating 'analytical narratives' in the social sciences and history (see Alexandrova, 2009 and Bates, 1998), but that label is concerned to explain only the particular case account, not to understand how a case narrative might create wider explanatory resources.

Table 1
Narrative ordering and exemplary possibilities.

Narrative Ordering	Colligation	Juxtaposition
Narrative Criteria	Consistency - Coherence - Credibility - Puzzle-Solving	
Exemplary as a method of approach that can be used at other sites	Lynd and Lynd's *Middletown*: exemplary for - how to construct a description of urban life	Geertz's Balinese cock-fight: exemplary for - how to construct an explanation of society
Exemplary as a concrete problem solution that can be extended to give an explanation to similar phenomena elsewhere		Whyte's *Street Corner Society*: exemplary for - explaining a slum society; and for - explaining small group behaviour Baden-Fuller's steel industry exit: exemplary for - explaining order of firm exit

paradigmatic insofar as they are sufficiently flexible to allow of extension to related phenomena ... (Roth, 1989, p 468).

Roth uses Geertz' (1972) essay on the Balinese cock fight as his exemplar for how narratives explain. While the term paradigmatic is loaded with too many connotations for easy use here, the notion that narrative accounts might only fully qualify as explanations if they enable extensions to related phenomena is important.[17] But there is a difference between Geertz's narrative proving exemplary for how to write about culture in a general way, and the claim that his solution to a specific puzzle about a gambling society can be used to explain other such societies elsewhere. The evidence of these case study narratives suggests that puzzles are generally solved within the existing community norms - that is, they provide narrative explanations considered satisfactory to those scientific communities for sound epistemic reasons (based on the local social science set of methods). When we observe those narrative explanations being extended to similar or related phenomena, it seems reasonable to say that those case narratives have proved *exemplary* to the community. But this quality of proving exemplary needs to be treated with some care for what makes something travel well - with integrity - beyond the case, to be used fruitfully at other sites is not obvious. There are several aspects of case work that might prove exemplary for a community, for example: methods, measuring structures, or evidence sets, as well as the particular (narrative) explanation of the case itself. And there are other elements of those exemplary case narratives, beyond their character as dealing in juxtapositions, that might be needed to prompt such extensions.[18] These considerations lie behind some critical differences between the cases from anthropology, sociology and economics.

To begin with, as Roth noted, Geertz' essay established an exemplary case of how to do cultural analysis for anthropologists, that is, as a method of approach to solving research puzzles in narrative form. This has made it one of the classic essays not just in anthropology, but for the social sciences more generally as 'the exemplar' for how to create narrative explanations out of juxtapositions. But his specific narrative explanation of cock fighting, or even a society socially addicted to gambling, does not appear as a case spawning extensions. In a strange way, "Deep Play" is like *Middletown*: it proved exemplary in providing a new methodological standard of how to do a particular kind of anthropological analysis, indeed of how to analyse culture, just as *Middletown* did in sociology. But in neither instance, did the narrative explanation of

the concrete case provide extensions nor conceptual material that travelled beyond the case to explain other cases (even though, as I already remarked, *Middletown's* evidence set was widely used elsewhere).[19] The difference between narratives that prove exemplary for their method of approach, and those that prove exemplary for explaining specific phenomena is captured in Table 1.

The table marks the contrast. While Whyte did not provide a new method of approach to how to do studies of a particular kind of community, his narrative and label changed the way other social scientists interpreted and understood 'slums'. Such groups were henceforth 'societies', for his label, 'street corner society', provided a succinct 'solution' to his overall puzzle about the functioning of those communities and very rapidly became the new term that 'explained' other such communities: his narrative explanation indeed changed the way sociologists and other social scientists thought about those societies. So Whyte's *concrete case narrative* account of street corner society proved *exemplary* in immediate extension to other sites, times and ethnic communities, both within his disciplinary community and beyond - it was cited nearly 1000 times between its publication and 2010, and across the full range of social science fields and sometimes beyond them.

But cases that shift the way a field thinks about a generic phenomenon are surely rare and it is equally important for this paper that a number of other extensions, of more limited scope, were made from Whyte's case-work. He dealt with a number of little puzzles, with solutions developed within the existing 'normal' frameworks of methods, creating specific narratives that fitted within the big puzzle and overall narrative. These specific narratives also travelled beyond the case to other sites to be taken up by other sociologists working on similar problems in other ways. One such exemplary mini-narrative was Whyte's explanation of the relationship between individual status and individual behaviour in small groups, research that involved new observations, recapping past history of the group, and purposeful experiment, to answer the puzzles he had found in this domain. These readily found extensions beyond his case, taken up in research in experimental and ethnographic methods by other sociologists of the day within their normal science.

Baden-Fuller's exit case in economics was specific to the time, place and industry, but his narrative explanation based on economic theories and statistical modelling also proved exemplary: it was taken to offer a generic way to understand the pattern of exit in firms, and so to provide explanations at that and at other sites. He had unravelled the economic factors that determined the outcome to the puzzle and retied them in such a way that the explanation made sense using the existing economic models and methods of the day. The phenomenon he addressed had not been previously explained in terms of that combination of factors, but his explanation made good sense within the then current set of ideas,

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[17] It has become very difficult to use the term 'paradigm' without at the same time invoking a Kuhnian notion of the term, and this seems to be what Roth has in mind.

[18] The problem of what knowledge can be transported beyond any individual case or experiment or field trial to be resituated in a particular site elsewhere can be thought of as a series of (perhaps many) individual re-situations (see Morgan, 2014) rather than as a general move to 'external validity'. But the issue of what travels from one site to another 'with integrity', and is 'fruitful' in those new sites, can also be approached in a more practical way by tracing the ways that scientific knowledge does travel (see Howlett and Morgan, 2011).

[19] In Geertz' terminology (1973), *Middletown* is a 'microcosm model', not something that could generate wider conceptual materials.

concepts, models, theories and methods in economics. Interestingly, unlike Whyte's street corner society, the details of Baden-Fuller's case (time, place, and industry) were ignored and soon forgotten, but his narrative economic account, with its main factors, proved exemplary as evidenced by the fact that it travelled well beyond the case boundaries to be used (not just cited) more than 50 times in the following 20 years in a variety of theoretical, empirical, practitioner and policy sites. The case explanation did not fundamentally change the way economists saw the exit problem, but rather offered innovative ways to formulate its analysis differently and so explain the unexpected outcomes that were observed. In effect, the puzzle-solving materials and concept-based explanatory account proved exemplary as a generic narrative explanation that moved well beyond the original site. So, here the case itself was not considered special and was not remembered, but his *narrative explanation* was.

How and why do the narrative explanations of some specific cases, such as the street corner society case and the exit case, prove to be flexible enough to apply to related phenomena beyond their original sites, that is, to be taken at those new sites as exemplary in explaining those other particular phenomena? The first point to recognise here is that such case study work often involves working abstract, conceptual, or theoretical social science ingredients into the narrative accounts. These two examples show how narratives in social sciences embed more generic elements beyond those found in careful description, just as the art-pieces: Prudence, or the Money-Changer embedded conceptual elements. Either these conceptual elements are brought into the case by the scientist or they are developed within the case as the puzzle is being unravelled or the solution ravelled. Indeed, it is difficult to imagine narratives of such cases that do not either bring in, or develop within, conceptual materials in their explanations. Such more abstract conceptual ingredients not only provide the materials to help validate the explanations given in the concrete cases to the social science community, but - here is the second point - they also provide the materials which can support those extensions to other sites. These conceptual, abstract, and even theoretical materials offer obvious resources for flexible use beyond the case. Their usage enables narrative explanations that answer how- or why-questions in one case to offer possible extensions to (potentially many) other sites.

We have seen that narrative explanations that solved puzzles for specific cases travelled quite broadly to various other sites from two out of our three puzzle-solving cases: Whyte's street corner society, and Baden-Fuller's industry exit. These two cases illustrate different ways in which materials produced in case study narratives are taken up by the scientific community in 'extensions' enabling case-based knowledge to be resituated and used in another case or realm. And though they come from very different social science fields, with different values associated with their community methods, they share much that is generic to case study work and to its narratives. But this kind of specific case extension apparently did not occur with Geertz's case of cock-fighting. Can this difference in extension be characterised, and so understood: does it depend on some difference between Whyte's and Baden-Fuller's accounts with Geertz' cock-fighting account?

Geertz (1973) argued for case studies, or perhaps anthropology more generally, that theory is used at a 'low level', which is not to imply low theory, but theory used very closely to evidence. His terminology: 'thick description', does not mean merely detailed description, but description that is already understood as filtered; it is a process of conducting observation plus interpretation. A historian working in the archives, or a sociologist working in a slum area, or an economist studying an industry full of firms cannot just gather data but automatically mentally codes, classifies, and uses concepts (ie mentally 'colligates'). But such 'thick description'

necessarily also includes analysis of complex conceptual structures in the societies observed. This is because the social scientist is faced in the field by a knot of puzzles (as Geertz labelled them), and the strings need conceptual work to pull apart those puzzles and retie them into an explanation of what is happening.

Whyte, Baden-Fuller and their communities in sociology and economics would surely agree with this description of case study research: it is not un-interpreted or un-theorized description, but they might well differ from Geertz, the anthropologist, over the level at which concepts, abstractions, and theoretical elements are used.[20] In their fields, case studies are not thought to generalize across *all* similar such sites, but are recognised to create materials that move beyond the case; case knowledge does get resituated at other sites to explain puzzles found there as we have seen from their examples. This is in contrast to Geertz, the anthropologist, for whom the point is "not to generalize to other cases but to generalize [only] within them" (1973, p 25–6), and that of concepts it not to abstract them but to think "creatively and imaginatively" with them. Thus, for him, the case study mode which, in many senses is *the* mode for anthropology, involves 'clinical inference' - as appropriate also to psychology and medicine - its narrative is diagnostic, and so explanatory of the case at hand, not extensible to other cases (see Hurwitz, in press). Thus, 'deep play' is interpretative of the Balinese cock-fighting society, not of cock-fighting communities in any other cultures. It is a narrative of exemplary quality for the interpretation of that particular culture, not an exemplary narrative offering an interpretation of the combination of betting, cock-fighting, status relations, and so forth, that might be extended elsewhere.

Whyte and Baden-Fuller also operated at just such a detailed evidential level but their narratives also included conceptual, theoretical and abstract materials which they understood could be taken from their analysis of the case to be applied, and used to explain, similar phenomena elsewhere. In Whyte's case, both his account of the status-behaviour relationship of men in small groups, and his new explanatory label, 'street corner society', became generic, and his latter definition and description of the societal form of the street corner group very quickly spread to become standard terminology used in many different fields. In Baden-Fuller's case the various distinctions between different kinds of firms was known to be important, but their combination in this particular context of exit had not been fully recognised. So, even though economists and sociologists are traditionally thought to not share much in common, Whyte's use of theory and concepts in his case study is similar to such uses found in Baden-Fuller's account of industry exit. Both scientists produced accounts out of processes of ordering (colligation and juxtaposition), using conceptual or abstract elements and categories to create their case narratives of concrete cases, but those explanations then showed considerable power to travel to other cases, to other kinds of literature, and other kinds of users: that is, they were concrete puzzling cases whose narrative explanation was flexible to extension.

Like Geertz, Whyte and Baden-Fuller used concepts to think 'creatively and imaginatively', but unlike him, they used their concepts at a middle level, a level that involved a degree of conceptual abstraction from the empirical level with the result that their case findings could more easily be taken up by others via their narratives. In both communities, sociologists and economists, there is an assumption that the case narratives must include all the details of the case, but must also include a more abstract level analysis. These conceptual materials are used to support internal validity for the case-based narrative, but they are the same

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[20] See again, the defining characteristics of 'case study' in Morgan, 2012.

materials that provide their potential generic validity beyond the immediate case narrative. Perhaps this accounts for why their narrative explanations travelled from their cases to become explanatory in new sites - because the narrative is bound and framed in conceptual materials which can travel along with the narrative, and indeed, which help to make the narrative travel.[21] In contrast, in Geertz's account, he explicitly argues that internal validity does not justify external or generic validity beyond the case, possibly because the theoretical materials operate much closer to the evidence and cannot be easily abstracted to move to the other potential sites. Where Whyte and Baden-Fuller used their middle level theories and concepts as the warp on which to weave their explanatory narratives, in Geertz' account the warp is indistinguishable from the weft.

4. Conclusion: narrative ordering: configuring and configuration

Social science case study accounts of society lack the time dynamic of history or of time-domain sciences that shape narrative accounts and that house narrative explanations. And without that time dynamic, alternative ordering devices are employed. Two forms of 'configuring' have been discussed here: configuring by colligation (assembling together under a label), and configuring by juxtaposing. Narrative ordering refers to the way that a scientist brings similar and conflicting elements into contact with each other; the ways that interrelations are revealed and established; the modes of interleaving; and the process of creating an overall picture in which all their pieces of investigation have a place. By focussing attention on the way that processes of juxtaposition are associated with the creation and solution of puzzles, we have seen how such accounts embed explanatory resources that involve generic conceptual materials and so the potential to be used beyond the immediate domain of the narrative.

Configuring is a process and points to an outcome - a configuration that can be grasped in its entirety as Mink suggests. But these social science researchers are not looking for a career, or even the linear layering and ordering of a brick wall, but something more like a mosaic or jigsaw or collage, where the many individual elements gain their sense and role only because of their position in relation to the presence of the other elements. The case study narratives have all the characteristics of documentaries: reporting, revealing, analysing, demonstrating an ordering of the elements to show how they hang together to make up a topic, event, or phenomenon. Such a narrative representation - the configuration - and its associated explanatory elements, is not reductive to something else, but that does not mean that it is unashamedly and only a set of particulars.

Of course narratives do offer particular accounts, but as we have seen, the use of theoretical and conceptual materials offers resources for those narrative explanations to travel beyond the case. Such reuse of narrative explanations indicates the possibilities of narratives having both epistemic and ontological functions in social science. Epistemic in the sense of a justified way of developing social science knowledge, ontological in the sense that without these narrative materials that later social scientists use, it would not be possible to state the something is 'a case of X', without the primary case study establishing the exemplar X that defines the genus X. And, while the narrative configuring that involves juxtaposition may make more demands on the researcher to ask questions and prompt answers, a process which requires more puzzling because there is an initial mismatch might well end up digging much deeper and providing a more telling explanatory narrative, and one that travels to other sites, than a more prosaic outcome from the colligation process of configuration. Disjuncture-based narratives may well lead to solutions with broader scope and writ where colligation-based ones may remain more narrowly tied to their own site.

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[21] We can interpret this use of narratives as paralleling the use of abstractions as 'ladders' to help resituate explanations at another site (see Cartwright, 2012 and Morgan, 2014). While the presence of abstract models in Baden-Fuller's work helped his solutions to travel, this is not incompatible with the idea that narrative explanations are also an important device for travelling (and thus finding extensions) - for economists like both formal models and narratives too in their informal practices (see Morgan, 2012). This is strong contrast to anthropologists whose 'travelling facts' depend on the facts being well clothed with details of time and place before they are accepted (see Howlett, 2008 who has traced how facts travel within and between the social sciences).

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