

# Multimodal narrative construction in Christopher Nolan's *Memento*: a description of analytic method

CHIAOI TSENG AND JOHN A. BATEMAN  
University of Bremen, Germany

## ABSTRACT

In this article, the authors propose a systematic method for analysing film that bridges the gap between analyses of narrative concerns, on the one hand, and the analysis of fine-grained technical details, on the other. They illustrate the approach on the basis of an analysis of *Memento*, a film particularly noted for its unusual narrative structure and show how their method maintains a tighter linkage with the filmic material presented while at the same time drawing out narratively significant generalizations.

## KEY WORDS

cohesion • conjunctive relations • film • multimodal discourse • narrative • semiotics • systemic-functional linguistics

## INTRODUCTION

Schemes for the description of the technical and formal devices deployed in film are well established and form part and parcel of the film analyst's everyday toolbox. Nevertheless, the complexity of the filmic medium presents extreme challenges for reliable schemes of technical description. These challenges are not due primarily to problems of physical measurement: it is, for example, perfectly possible to measure camera angles more or less precisely, to recognize characters, to extract gaze vectors, to measure brightness and colour distributions, to state how characters are positioned and move with respect to objects and other characters, and so on. The problem is rather one of knowing *which* out of this myriad of variables are of significance in any particular case and which are not.

This problem is critical for pursuing reliable film analysis because the aspects of material filmic form that may be mobilized to carry patterns leading to particular interpretations rather than others are not set in stone. As Edward Branigan (1984: 29) phrases it:

Every process of signification is a *formal play of differences* ... An important consequence of [this belief] is that there are no inherent meanings. For example, a dissolve in film does not inherently signify a short lapse of narrative time; in a particular *system*, however, a dissolve may mean just that ... In addition, the meaning is not unique – other physical properties may be replaced by another device ... precisely because it is system, not material form, which determines meaning.

The level of abstraction of the traditional technical categories of cuts, music, camera angle, camera distance and so on is therefore too low. Drawing a rough linguistic analogy: such features are analogous to a machinery describing the acoustic facts of language – i.e. the actual sounds that come out of people's mouths – but do not themselves take the next step up in abstraction to reveal the grouping together of phenomena relevant for carrying and building meaning. It is this next step, however, that is crucial.

The interpretation of technical filmic devices therefore needs to be made against the background of possibilities given by particular *systems of meaning* (see Metz, 1974b: 134) that are constructed and activated in the course of particular films. But finding those 'systems' that contribute to filmic interpretation and providing sense to the stream of technical features deployed remains *the* major stumbling block of systematic film analysis: it is simply unclear which groupings of filmic technical features will do the job. Without systems of *contrasts*, there are no formal 'differences' out of which processes of signification can grow and the entire analytic process is difficult to get off the ground.

The complexity of this task has caused the search for filmic systems to go out of fashion. Particularly during the 1970s and early 1980s, several highly detailed analyses of individual films were produced, focusing precisely on exploring systematic oppositions deployed during a film's unfolding. Of these, the most significant include Heath's (1975) account of Orson Welles's *Touch of Evil* (1958), Bellour's (2000) descriptions mostly originally published in the 1970s of Alfred Hitchcock's *North by Northwest* (1959), *The Birds* (1963), *Marnie* (1964) and of several other classics, as well as a few attempts to apply the semiotic analytic scheme of the film semiotician Christian Metz to entire films (e.g. Koch, 1970; Roth, 1983). However, the sheer level of technical detail deployed in these analyses is uncharacteristic of today's broader brush approaches, which more commonly draw on methods from literary science, stylistics and cultural studies. Some of the most analytic approaches pursued nowadays, including cognitively-inflected accounts of film form and style such as Bordwell's (2007) 'poetics' of cinema, build on detailed analysis but have not themselves provided comprehensive systematizations of the concepts standing behind that analysis, tending instead to well-supported illustrations of more general claims.

Such illustrations can, of course, be highly insightful and reveal much about the workings of film. They cannot yet, however, be said to support

genuinely *empirical* investigations. By ‘empirical’ here, we mean constructing hypotheses concerning how films make their meanings, which can subsequently be checked against larger samples of data – in this case films – in order to see if those hypotheses are supported or refuted. Analyses of this kind demand, on the one hand, a tighter relationship between the filmic material under consideration and the analytic categories among which patterns are being sought and, on the other, methodologies for analysis that can be applied across distinct films with a minimum of ‘pre-direction’. As suggested earlier, traditional vocabularies for the technical features of film are examples of such analytic schemes but are not themselves sufficiently constraining of ‘higher-level’ interpretations. What we need are ‘mid-level’ schemes that are anchored both downwards towards technical details and upwards towards more abstractly relevant patterns. Such schemes need moreover to *operate without specific commitments drawn from the individual film under analysis* in order to ensure comparability across analyses.

## METHODS

Our particular approach to isolating systems of contrast for film draws on techniques developed within linguistics for the investigation of *discourse* phenomena. We systematically extend and adapt these for film. This approach is strongly motivated both on methodological grounds and by the nature of the filmic phenomena themselves. The notion that film can be considered beneficially from the perspective of discourse is itself an old one (see the extended discussion in Bateman and Schmidt, 2012), but it has long been unclear how to take this further. It is only relatively recently that linguistic approaches to discourse and its dynamic interpretation have developed sufficiently to make their application to film worthwhile. For the purposes of the current article, we draw here on socio-functional semiotics, a general approach to human communication growing out of the linguistic work of Michael Halliday, Ruqaiya Hasan, Jim Martin, Christian Matthiessen and colleagues (see Martin, 1992; van Leeuwen, 2005). Particularly in the seminal work of Theo van Leeuwen and Gunther Kress (Kress and van Leeuwen, 1996, 2001), it has been argued that the semiotic principles developed in this tradition offer solid foundations for the exploration of other semiotic modes, including film. We argue similarly that several areas of linguistic *discourse organization* originally developed in this tradition can also be considered in this way.

Earlier work in this direction includes van Leeuwen’s (1985) account of filmic rhythm and his (1991) application of discourse semantic *conjunctive relations* to film and TV. We will draw on this latter area later, building on an extension of Metz’s (1974a) *grande syntagmatique* originally set out in Bateman (2007). We also apply results from the discourse semantic area of *cohesion* (Halliday and Hasan, 1976). Although the potential relevance of this resource for film has long been noted (e.g. Palmer, 1989: 316, 321), little

work building on these proposals has appeared (e.g. Janney, 2010; Tseng and Bateman, 2010). We now present the extended notion of cohesion originally proposed in Tseng (2008) that is based purely on the requirements of film, demonstrating how this plays a central role in driving coherent narrative construction.

### **Object of analysis**

One of our primary concerns is to demonstrate how our scheme of analysis naturally augments and extends approaches to film analysis undertaken solely within film studies. For this, it is beneficial to take illustrative film examples that already stretch those approaches. One natural candidate of this kind is Christopher Nolan's *Memento* (2000). *Memento* raises many issues, both in terms of the themes it addresses and in terms of the unconventional and precise narrative structuring devices employed; it has as a consequence already received extensive discussion in the film literature. As we shall see, many of the issues raised directly impinge on the discourse mechanisms of cohesion and conjunctive relations that we propose here for film.

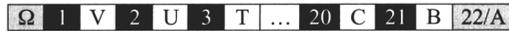
The most detailed presentation of the film's structure is Andy Klein's online essay 'Everything You Wanted to Know about *Memento*', which also gives a good overview of the story line (Klein, 2001). Briefly summarizing, the film deals with the search of former insurance fraud investigator Leonard Shelby (played by Guy Pearce) for the man he believes killed his wife during a burglary. Leonard suffers from 'anterograde amnesia', which he contracted from severe head trauma during the attack. This removes his ability to form new memories, although his long-term memory from before the attack is apparently unimpaired. As Andrew Kania's (2009) collection of essays on *Memento* illustrates in detail, there is much to be drawn out of the particular way in which the film's themes and narrative structure inter-relate. This structure is commonly held to echo the main character's condition or, more accurately, to place the viewer in a condition echoing that of the character.

The events of the film unfold in two distinct alternating narratives, one in black and white, and the other in colour. The black and white sequences are structured in chronological order, showing Leonard talking on the phone to an unidentified caller in a motel room. The narrative strand in colour unfolds in reverse chronological order, depicting Leonard's investigation. As each colour scene begins, Leonard has just lost his recent memories, leaving him unaware of where he is or what he was doing; the colour scene ends just as its events fade from his memory. In the scheme developed by Klein and also followed in Kania's collection, the structure of the film can be depicted as shown in Figure 1. The two main sequences, one running forward (scenes 1–22) and one backward (scenes A–V), are linked by a structural cross-over scene, labelled 22/A. The film as a whole is introduced by a scene distinctive in its own right, designated  $\Omega$  by Kania, that begins the film but is the last event

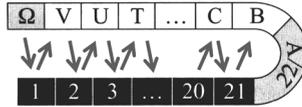
*Memento's* chronology, i.e., the unfolding of pro-filmic events in time



*Memento's* filmic organization, i.e., the unfolding of the film



Graphical rendition of *Memento's* 'hairpin' organisation (Nolan)



**Figure 1** The scene structure of Christopher Nolan's *Memento* as defined by Klein and based on the graphical depiction proposed by Kania (2009: 3–4, adapted from Figures 0.1, 0.2 and 0.3) with kind permission of the publisher, Taylor & Francis Books).

in the fictional world of the story. The film therefore unfolds as shown in the last of the three depictions in the figure: the opening scene  $\Omega$  moves to the first of the black-and-white scenes (1), then on to the last of the colour scenes (V), then back to the second of the black-and-white scenes, and so on until the structural cross-over scene is reached, ending the film.

The material the film presents leaves many questions open even concerning the basic 'facts' of the story. In the last analysis, it remains unclear whether Leonard's wife really did die in the burglary, whether it was her or the wife of the curious Sammy Jankis who actually suffered from diabetes, whether Leonard may have killed his wife himself, how many people he may have killed since the burglary, and so on. Possible 'solutions' to these puzzles are discussed at length in analyses offered for the film, weighing the highly equivocal evidence that can be gleaned sometimes to the point of obsession and triviality. Most often the analyses then end as they begin, i.e. with open questions.<sup>1</sup>

In *The Way Hollywood Tells It* (2006: 78–9), David Bordwell discusses various facets of *Memento* and its construction of narrative, noting:

Within the backward stream of action, Nolan deploys a host of cohesive devices to keep us oriented to the plot's progression. Scenes are linked by physical tokens: photos, facial scratches and bruises, a broken car window, a license plate, a motel room key, and a flurry of notes on pads, cups, coasters, and Leonard's flesh. Closure operates retrospectively, but the events still cohere through cause and effect.

Bordwell is using 'cohesion' here in both a non-technical and technical sense, being himself (personal communication) well aware of the mid-1970s functional linguistic work on cohesion by Halliday and Hasan. The analyses he offers are, however, primarily non-technical in that the links described are picked out from the film without reference to any more explicit characterization of just what should count as cohesive and what not. This defocuses the

crucial role of cohesion as a formal device that serves *discoursally* to present the viewer with specific candidates for filmic interpretation.

Relying only on informal notions of cohesion in terms of some kind of ‘repetition’ is insufficient here since, particularly as we will see in the case of a film such as *Memento*, cohesion is only weakly related to issues of ‘cause and effect’. This echoes a recent criticism of Bordwell’s treatment raised by Warren Buckland (2009: 5) in his introduction to his edited volume on ‘puzzle films’. Buckland proposes that extreme narrative structures of the kind exhibited by *Memento* break the ‘boundaries of the classical, unified mimetic plot’. This makes them difficult to reconcile with the well-behaved ‘chronological, cause-and-effect chain of events occurring within a given duration and a spatial field’ that makes up Bordwell’s characterization of a film’s *fabula* or story and which, for Bordwell (1985: 49), plays a central role in explaining film comprehension. Moving beyond cause-and-effect as the main driver of interpretation is, however, a considerable challenge because it demands attention to precisely that aspect of filmic organization isolated earlier: discourse organization.

To move us towards this, we now explicitly import more of the technical details already known for cohesion and conjunctive relations from linguistic work on discourse, adapting them as necessary for film. We begin by illustrating our styles of analysis as they apply with respect to one short segment taken from near the beginning of *Memento*. The segment, scene 1 according to Klein’s numbering scheme, consists of six shots and is shown transcribed in Figure 2. After having introduced our analytic tools, we then return to our main concern of narrative construction.

### **Identification: cohesive reference in film**

The first method we call upon to unravel how viewers are guided to particular ways of comprehending film narratives is the framework of *filmic identification* (Tseng, 2009). Filmic identification provides a powerful discourse semantics for examining cohesive ties between film elements within and across images. It is defined as a multimodally extended version of Jim Martin’s *identification* discourse semantic system for verbal language (Martin, 1992: ch. 3). According to Martin, the choices of the identification system in natural language realize the identity tracking of people, places and things throughout a text. The structures of identification, namely, how relevant people, places and things are actually tracked, then highlight the *textually constructed* unity of any particular text.

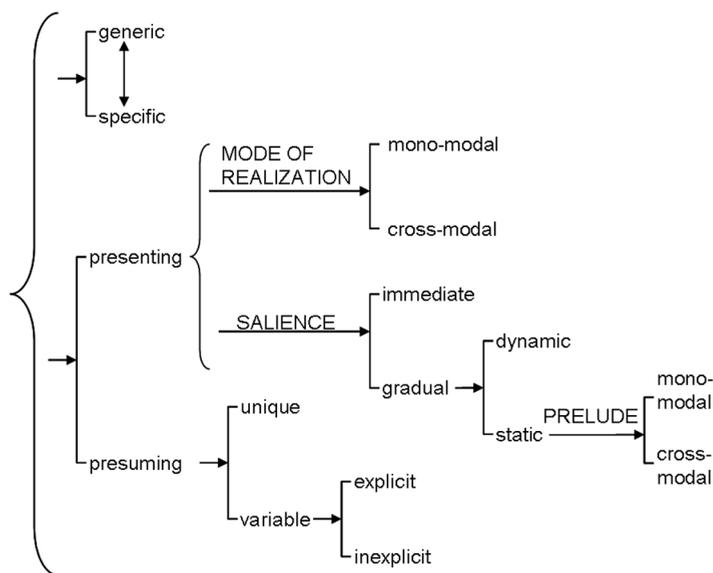
Martin’s identification system is itself a further development of the original notions of referential cohesion developed by Halliday and Hasan (1976) mentioned earlier. We now take this further in order to develop an identification system specifically for film. In this way, we capture not only the intuition that there is an area of semiotic work shared across language and film but also the ways in which it is necessary to differentiate between the



**Figure 2** An example sequence selected from Christopher Nolan's *Memento* (2000): shots 17–22 from the film as a whole; scene 1 in Klein's numbering scheme.

two modes. The filmic identification system describes the filmic resources that realize the presentation of *filmic* people, places and things (characters, settings and objects) and the resources that track the reappearance of these narrative elements.

The identification system developed for film is shown in Figure 3 represented as a *system network*. Networks of this kind are used in systemic–functional linguistics to show the abstract paradigmatic ‘choices’ available for language users drawn from the meaning potential of their language (Halliday



**Figure 3** The filmic identification system developed in Tseng (2009).

and Matthiessen, 2004). The network in Figure 3 correspondingly shows the functional potential for *filmically* cueing identities of characters, objects and settings as a film unfolds. In this representation, contrasting options are collected together into individual *systems of choice*: for instance, in the system of [presenting/presuming], only one of the two features may be selected at a time. In general, we write features selected from a network in square brackets and indicate choice points either by connecting features with a forward slash or by giving the choice point a name. Certain feature selections then also lead on to finer classifications. For example, in the case of the choice [gradual], the system leads on to a further dependent, i.e. finer, choice between [dynamic] and [static]. It is also possible for several dimensions of classification to be pursued in parallel: such systems are called *simultaneous* systems and are represented by grouping the affected systems together with a curly right-facing bracket. In Figure 3, for example, choices need to be made from the features presented by *both* the systems [generic/specific] and [presenting/presuming] for a complete description. Simultaneous options of this kind can give rise to extensive cross-classification.

System networks take on two closely related tasks: the first is to characterize inter-relationships and dependencies among choices and is similar to many approaches to classification; the second is to describe the *structural consequences* of any choices made. The former captures the work of the paradigmatic axis; the latter the syntagmatic axis. Following the lead of de Saussure and Hjelmslev (de Saussure, 1959[1915]; Hjelmslev, 1961[1943]), both axes are considered essential but separate components for any complete description. We return to this for the present network later in the article; for now we

simply note that the kinds of structures associated with the options described in Figure 3 consist of cohesive chains holding with respect to particular cohesively relevant filmic discourse entities, such as participants in activities, particular locations, objects and so on. Full details are given in Tseng (2009).

Considering just one of these filmic discourse entities – the main character, Leonard – we can illustrate the operation of the network and the meaning of its features for cohesion in film by considering Leonard's filmic presentation within our example shot sequence. In shot 17, the identity of Leonard is *presented* for the first time and thus it is appropriate to choose the feature [presenting] from the system [presenting/presuming] to describe this. This choice leads on to the simultaneous systems mode of realization and salience, i.e. the *manner* of the element's presentation in the film. For the former, Leonard is identified only visually and so the feature [mono-modal] is selected. For the latter, the extreme close-up on Leonard's face is taken as realizing the choice of [immediate salience] rather than [gradual]. The option [gradual] would classify a presentation strategy whereby a character/object is *progressively* foregrounded and so clearly does not apply here. Examples specifically of the [gradual] presentation strategy are when one character is placed in the background at the outset of the presentation and then *gradually* foregrounded through camera movement or by the character approaching the camera, etc. Alternatively, the gradual presentation of a character may be achieved by revealing some physical parts of characters/objects before their identities are fully and explicitly shown; this is actually the case for Leonard in the very first scene of the film as we discuss later.

Foregrounding of this kind is tied specifically to shot-by-shot audio-visual development and so forms a tightly defined subcase of more general notions of progressive revelation such as, for example, Sharff's (1982: 6) 'slow disclosure'. Slow disclosure would apply both to our example here as well as to large-scale narrative arcs within a film, even though there is an important difference that needs to be captured between these. In particular, the larger-scale structures should be seen not just as 'larger' organizations but as *more abstract* organizations. One of the ways of *realizing* narrative slow disclosure is then via the cohesive presentation strategy [gradual]; there are, however, naturally further possibilities as well.

A choice must also be made for Leonard in the current shot from the system of [generic/specific]. The features available here refer to the degree of generality of identities of characters, objects and settings. This system is modelled as a continuum rather than as contrasting options – realizing generic and specific identities in film is not an either/or choice, but a continuum of relative degrees of generality, varying from 'the most general characters, objects and settings' to 'specific individual identities'.

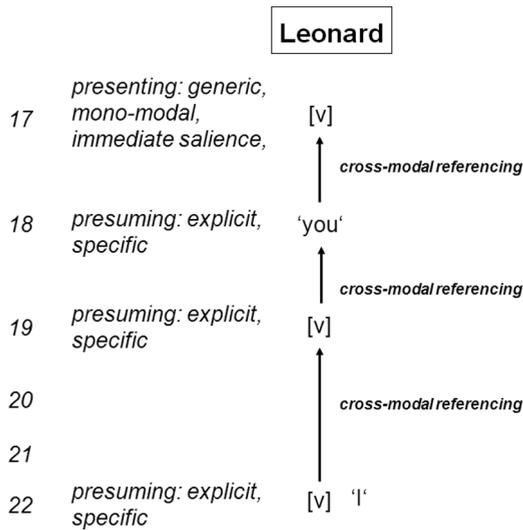
The generality of identities can be manipulated in film by several strategies. For instance, a character wearing certain visual attributes that represent specific social types (e.g. the scarf worn by Muslim women) in a viewer's

culture is regarded as less generic than any character without such social cultural cues; moreover, a generic character, although unnamed or unlabelled in the narrative, can be gradually 'specified' when he or she repeatedly appears and is recognized by viewers as a certain specific character. In the present case, for example, although the main character's name is not specified throughout the extract, after his presentation in close-up in the current shot he reappears explicitly in shots 19 and 22. This is sufficient to move his identity from 'some [generic] man' to 'the [specific] man' in the motel room as the segment proceeds. This can also be seen as one of the ways of filmically realizing the 'following-pattern' recently argued for interpreting narrative by Altman (2008: 26).

This *progression* of cohesive strategies across a film sequence is an essential part of the analysis. The cohesive strategies adopted for an element are therefore collected together in order to build *cohesive chains*. Such chains are formed whenever particular elements are placed repeatedly in sequences of cohesive ties over the unfolding of a text. Whereas all elements in a textual artefact typically enter into numerous cohesive links with other elements, it has been observed in work on language that it is *the participation of elements in chains of connections* that is textually significant rather than individual elements alone. There are several distinct kinds of cohesive chains active within film. Those we are focusing on here are concerned with tracking identification strategies and so we term them more specifically *identity chains*. Tseng (2009) applies and develops the technique of constructing such identity chains further for film as follows.

For Leonard – who we can now actually identify analytically as the main character on the basis of his reoccurrence in cohesive chains – we have the following progression of cohesive links. First, his presentation is realized through the choices of [generic], [mono-modal] and [immediate salience] from the identification system as just described. Then, in shot 18, his identity is *presumed* (rather than presented) in his own narration ('you') and then again, in shot 19, as a visual figure. The two choices from the network that express these presuming cases are: (1) [*specific* identity] from the system of [generic/specific] because the visual reappearance has converted his generic identity of 'some man' to 'the man'; and (2) [*explicit* reappearance] under the [unique/variable] and [explicit/inexplicit] systems because his identity is, first, *not* a [unique] identity that needs to be widely known in the viewer's culture (such as, for example, Batman) and, second, realized *explicitly* (regardless of whether presented verbally or visually).

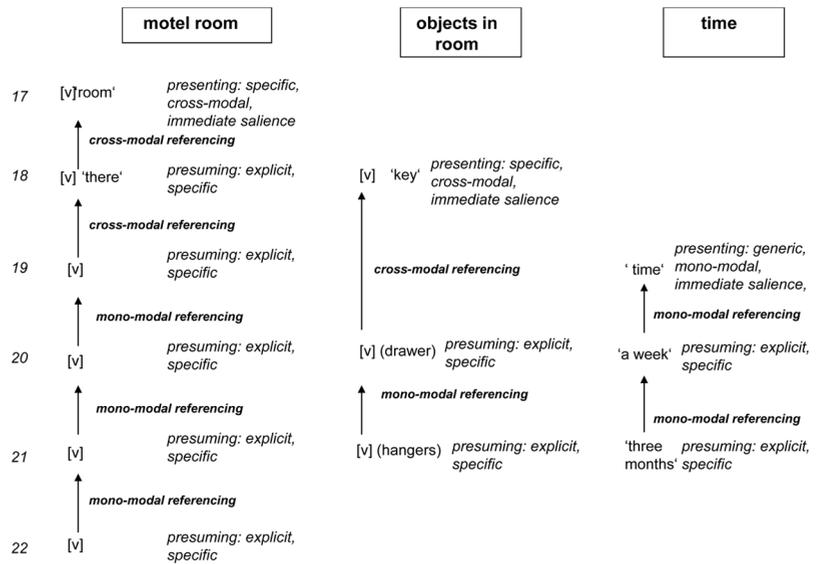
We represent sequences of identification strategies of this kind graphically as in Figure 4; the maintenance of the filmic identity chain is shown using arrows that link successive elements back to previous elements of the same chain. Here, therefore, we see precisely the ties built for Leonard across the example sequence: this tracks the filmic strategies for identifying the filmic element 'Leonard' in shots 17–22. Referring to this figure, we can also see that the tracking of Leonard's identity is realized *cross-modally*, e.g. in a verbal text



**Figure 4** Identity chain of *Leonard* isolated from the first black-and-white scene of *Memento* (scene 1 in Klein’s numbering scheme). Transcription conventions: numbers on the left give the shot number; [v] = visual figure; ‘...’ = spoken text; italic text = the choices instantiated from the identification system.

referring back to a visual figure (shot 18 to shot 17) and with a visual figure referring back to a verbal text (shot 19 to shot 18). This trait of *cross-modal referencing* is an important property of the filmic identification framework that distinguishes it sharply from that of the language system. That is, a character, an object or a particular setting in a film has the potential to be presented or reappear simultaneously or successively in different modes. In this way, we also use cohesive chains to examine and compare degrees of cross-modal filmic coherence and the contribution of distinct modalities to an integrated interpretation (Tseng, 2008).

Descriptions of the identification strategies employed in a film are then constructed in a similar way for all narrative elements that appear. Within the example extract shown in Figure 2, four prominent narrative elements of character, object and setting can be identified according to their participation in chains. In addition to Leonard, we also have general objects in the motel, the overall setting in the motel room and the elements relating to ‘time’ realized in Leonard’s spoken text. Each of these participates in a cohesive chain made up of a sequence of cohesive relations just as we have seen for the Leonard chain. Other narrative elements that may have potentially been relevant simply by virtue of their presence in frame fall away at this point precisely because they do not participate in a chain. In this way the textual focus on participation in cohesive chains serves as a ‘self-selection’ device. Any elements that do not reappear in chains are not being presented by the film as contributing textually to the film’s development (see Hasan, 1984; Tseng, 2008). This is, of course, a separate issue as to whether or not some element is ‘significant’ for the film: it



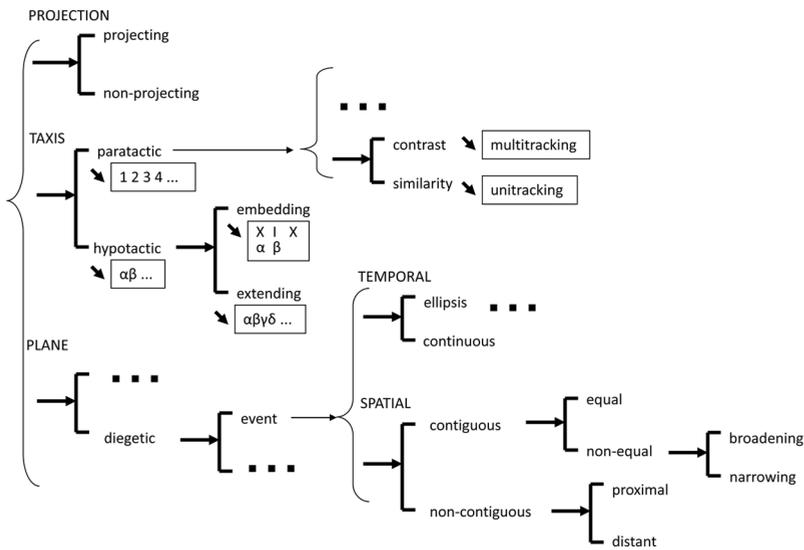
**Figure 5** Identity chains of *Motel room*, *objects in the room* and *time* from the first black-and-white scene of *Memento*, scene 1 in Klein's numbering scheme. Transcription conventions as in Figure 4.

is quite possible for a film *not* to draw attention to what dramaturgically is the most significant element. The cohesive chains simply reflect the textual commitments made by the film, which may be manipulated in a variety of ways for further textual and dramatic effects.

The cohesive chains formed for the remaining three elements are shown graphically in Figure 5. This and the previous figure collectively track the realization of each of the four identities operating within the extract. The first chain displayed in Figure 5, the setting of the motel room, is introduced mono-modally in Leonard's spoken text; the next link of this chain points back to the first one through cross-modal ties – in shot 18, the background of the room can be seen for the first time and the identity is also realized in Leonard's narration. In the following shots, this setting element is then visually tracked throughout the extract with [explicit] reappearance. The second chain is that of 'objects in the room'. These are [cross-modally] presented as some key in shot 18 when it is seen in the visual and the [specific] identity referring to 'the key' in the image is mentioned by Leonard. The [generic] objects of drawers in shot 20 refer cross-modally back to the verbal and visual 'key' in shot 18; and some clothes hangers in the room appear in shot 21, cohesively tying mono-modally via co-meronymy back to the drawers in the previous shot.

### Conjunctive relations between shots

The identification resources just described pick out elements within shots. It is also useful to characterize relations *between* shots – indeed, this is the



**Figure 6** Extract from a system network for filmic conjunctive relations developed in Bateman (2007).

more traditional area of filmic description falling under *montage*. The account adopted here builds on the often noted similarity between inter-shot filmic relations, on the one hand, and inter-clausal discourse relations or linguistic connectives, on the other; such *conjunctive relations* typically involve relations such as causality, temporal succession, similarity, contrast and so on (see, e.g., Martin, 1992; Metz, 1974b: 230–1; van Leeuwen, 1991). An extensive framework building on this similarity between conjunctive relations and accounts of inter-shot relations proposed in film theory has been set out and motivated in Bateman (2007). This framework combines most previous approaches to montage within a single classification of the possible relations that may hold between successive shots, again represented as a system network. An extract from the network relevant for the present discussion is given in Figure 6. It is worth noting that this network, as with all networks of the discourse semantics, is intended to represent the state of the film semiotic at a particular point in its history of development; changes can (and must) therefore be expected over time as the resources available for making filmic meaning evolve.

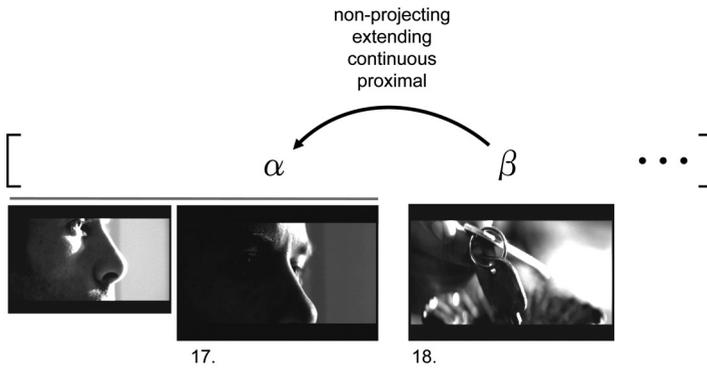
The current network is distributed across three main areas of choice: projection, which indicates whether an inter-shot relation moves the diegesis to a distinct perceptual level, as in a dream or point-of-view sequence; taxis, which indicates whether shots in an inter-shot relation are ‘coordinating’ or ‘subordinating’; and plane, which, in the case of a diegetic shot sequence, captures the temporal–spatial relations involved in the shift between shots. Selections need to be made from the alternatives presented by all three of these areas of choice in order to classify any individual inter-shot relation; each

relation is therefore cross-classified according to the possibilities offered by these parallel options. We will not run through all of the alternatives provided by this scheme here, but sufficient illustrations will be given in our analyses presented later in this article to indicate its operation. There are also significant issues to be raised with respect to the structural configurations described by this network and the 'units' assumed that we can only allude to in passing. Although we talk of 'shots' in the remainder of this article, we are actually dealing here with a more abstract relationship: the units between which relations are constructed by the filmic conjunctive relation network are visual elements that *may* be realized by shots but which may also extend over both 'larger' and 'smaller' entities. Foundations for this position are already present in Metz's (1974a) discussion of montage 'within shots' and Bellour's (2000) more flexible selection of units being placed in oppositions and alternations. Further discussion of the issue is given in Bateman and Schmidt (2012) but is beyond the scope of the present article.

Applying the scheme to our illustrative *Memento* fragment operates as follows. First, we check for each successive pair of shots which relations may hold. For present purposes, we will only consider the visual track, although brief comments on the audio track and its contribution to filmic structure will also be given as we proceed. Focusing attention in this way allows us to be quite specific about the uncertainties and interpretative possibilities that a film sequence opens up for its viewers.

Considering the first two shots of our example sequence (17 and 18) with respect to their conjunctive relation classification then gives us the following situation. We see the face of the main character, Leonard, from the side as the camera moves up to his eyes and he then looks down right. This is followed by a cut to some keys being picked up by a hand in extreme close-up. Due to the direction of the eye-gaze there is an eyeline match, suggesting that temporal and spatial continuity has been maintained across the cut. There is also sound track continuity, pointing equally towards an unbroken temporal unfolding.

In terms of the features of the network, we accordingly select [continuous] from the temporal system and [non-contiguous] from the spatial system – 'non-contiguous' because no part of the first image is present in the second. We can, however, make the (defeasible) assumption that the hand shown is that of the character shown before and so the more precise spatial relationship is [proximal]. There is, furthermore, no suggestion that the view of the keys being given is 'literally' anchored to the perception of the main character because the camera angle does not match appropriately (see Branigan, 1984); the shot is at most 'externally focalized', or 'semi-subjective', in narratological terms. This therefore leads us to select the feature [non-projecting] from the projection system. Finally, within the taxis system, we appear to have a second shot that 'builds' on the information of the first shot: same place, same person, same time, etc. This is described as an 'extending', 'hypotactic' (i.e.



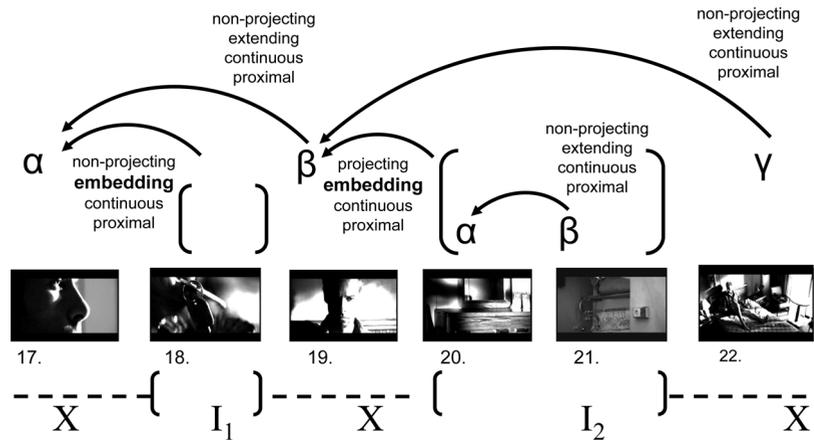
**Figure 7** Filmic conjunctive relation analysis of the shot structure inferred for the transition from shot 17 to shot 18 in Christopher Nolan's *Memento*.

subordinate) relationship following definitions from grammatical and discursive dependency well established in linguistics.

Quite complex structural configurations can be constructed during the unfolding of any film and this is also captured by the network. The syntagmatic commitments of paradigmatic choice are shown in Figure 6 by boxes associated with particular features. Each box specifies abstractly the structural consequences of selecting the feature with which it is associated. For our current example – the transition from shot 17 to shot 18 – we have selected the feature ‘extending’. The structural commitments of this choice are then as shown in the associated box, which contains a sequence of Greek letters. This represents a structural configuration in which one shot (labeled  $\alpha$ ) is logically extended by a further dependent shot (labeled  $\beta$ ), and so on; the Greek letters simply signal that there is a dependency relationship being posited between the identified units.

In shot 18, we take a dependency relationship to hold because we are led to assume that the hand in the second shot is that of the person in the first: so there is a dependency in the interpretation. There are a number of further formal indications supporting this, including continuous sound, cohesion of ‘colour’ and ‘tone’ qualities, etc. – space precludes discussing these here. This interpretation is then probably the most reasonable and, as a result, we have the logical conjunctive relation configuration shown graphically in Figure 7.

In the transition to shot 19, however, we return to the main character – this time frontally. Here, although we again have no reason to presume that the time and place is anything but continuous – indeed, the assumption of proximity for shot 18 is, if anything, strengthened – there is a further structural configuration that comes into play. With a three-shot sequence there is also the possibility of forming a filmic ‘embedding’ where an insert intervenes between two continuous shots. This structural configuration is shown in the syntagmatic box associated with the feature [embedding] in the conjunctive relation network, suggested by the sequence ‘X I X’ where ‘I’ denotes the insert. This also illustrates the common case of defeasible discourse analyses



**Figure 8** Filmic conjunctive relation analysis of the shot structure of the example sequence (shots 17–22 from Christopher Nolan’s *Memento*, scene 1 in Klein’s numbering scheme) showing the progressive construction of filmic structure.

being further *refined* or even *altered* as new information becomes available as a film progresses. The inter-shot relation classification between shots 17 and 18 is revised to [embedding] rather than [extending] while the other features – [hypotactic], [non-projecting], [continuous], and [proximal] – remain unchanged. Structurally, shot 19 is then added into the developing sequence as depending on shot 17 rather than on the immediately preceding shot 18.

Now, in the transition to shot 20, something different happens again. Shot 19 shows the main character looking intently forward with eyes moving slightly; shot 20 then shows a view compatible with being in the same scene but viewed from the position of the main character, panning diagonally upwards to the right. This can be attributed to the perspective of the main character and is accordingly classified as [projecting] rather than [non-projecting], corresponding well to the structural configurations discussed at length as ‘point-of-view’ sequences by Edward Branigan (1984). The other conjunctive relation features remain unchanged. Shot 21 then continues the panning movement of shot 20, now moving up, and so can be seen as a dependent extension of shot 20 rather than of the shots preceding.

To complete the sequence, shot 22 then gives us a delayed establishing shot showing the main character sitting on a bed in a hotel room, still looking around. A usual reading of this shot would then be as a return to the ‘non-projected’ main sequence. Analogously to the situation with shots 18 and 19, this is then also sufficient to retract the assumption of a simple ‘extending’ relationship between shots 19 and 20, replacing it again with the selection ‘embedding’. The filmic structure created here is therefore also one in which there is a development interrupted by an insert. The complete filmic organization of the example sequence from the perspective of filmic conjunctive relations is then as shown in Figure 8; feature selections that have been defeasibly revised are shown in bold.

The examples of embedding employed in this sequence show one of the ways in which the repeated selection of conjunctive relations as a film unfolds imposes complex structural configurations on the one-dimensional flow of shots on screen. It is important to note that this interpretation is constructed from the constraints imposed by the system network. Such incremental construction of 'larger-scale' structures is not provided by less formal characterizations of what is occurring in such segments, precisely because those interpretations are not channelled sufficiently tightly into possible discourse strategies. Grouping sequences together on the basis of dependency and projection status naturally gives rise to structural consequences of the kind shown here. Moreover, this form of analysis also provides some basis for recognizing interpretational relationships that are not clearly signalled by the technical devices employed. For example, we noted earlier that shot 18 of the keys does not readily obey Branigan's suggested positions for successful point-of-view shots: the viewpoint is far too near to, and level with, the keys. And yet in this sequence the simplest analysis would be of two alternating strands, one observing Leonard sitting on the bed and the other showing his perusal of the room. The more clearly signalled projection of shots 20–21 may therefore retrospectively 'colour' the assumed relation in shot 18 as also being [projecting].

Many films provide examples of such non-literal point-of-view shots – i.e. shots that can be assumed to be point-of-view by virtue of the establishment of an overarching structural context that supports projection as is the case here. This is therefore a good example of a *textual system* giving meaning to technical devices in the context of specific textual developments; isolated from its sequence, any interpretation of this shot as 'focalized' or similar that relies solely on the technical devices employed would be unwarranted.

## **COMBINING MODES OF ANALYSIS FOR NARRATIVE CONSTRUCTION**

We now return to the main problem raised as the task of this article: to show how the deployment of cohesive and conjunctive relation resources can guide narrative interpretation. Following the conjunctive relation analysis in the previous section, we can readily identify where such guidance is most necessary. For the shots directly preceding and following our illustrative segment, for example, the precise conjunctive relations holding remain unclear. No evidence is provided for temporal or spatial proximity and so this provides a weak basis for constructing narrative coherence. Our hypothesis is that this would present challenges of interpretation to the viewer unless compensated by *other* filmic resources.

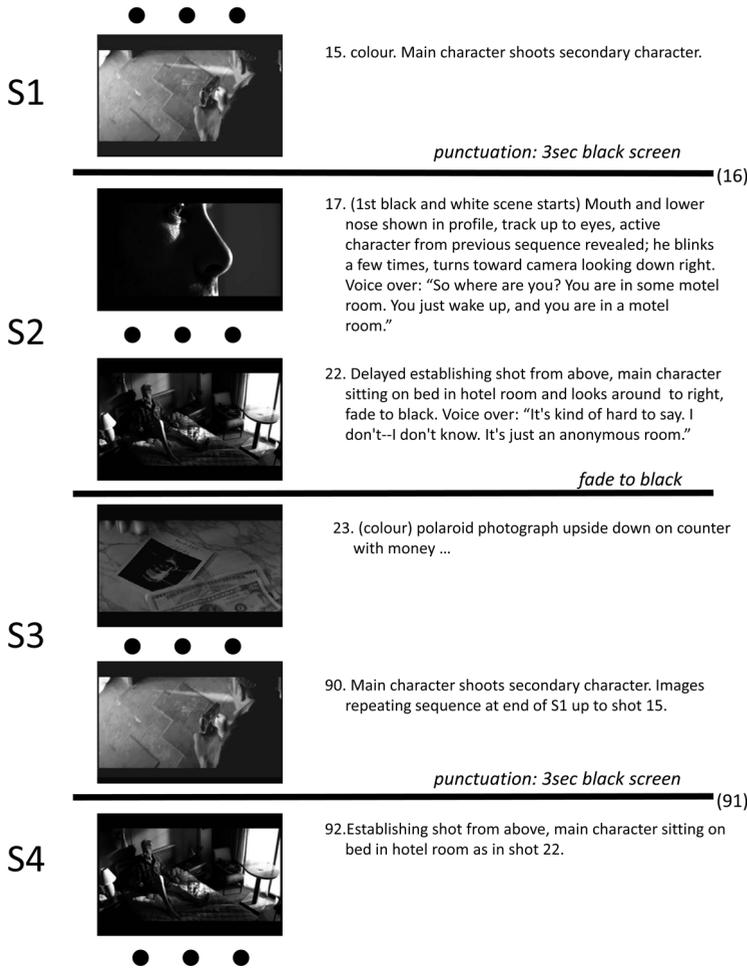
We therefore employ the lack of clear conjunctive relations as a probe for identifying places of potential interpretational problems in order to address the issue of how the filmic resources on hand succeed in resolving these difficulties. Here we will do this with respect to an analysis of *Memento's* first

seven minutes. This includes 103 shots spread out over a two-track alternating sequence of four scenes, which we simply label S1, S2, S3 and S4, respectively, in order to emphasize their location and inter-relations in the film; the four scenes correspond to those numbered  $\Omega$ , 1, V and 2 in Kania's numbering scheme (see Figure 1). Each track of the alternation carried in these scenes is distinguished by colour: one track is in naturalistic colour, the other in black and white as described earlier. We will show how *combining* the analyses of cohesion with those of logical connection provides precisely the information required to guide the viewer across problematic transitions. Our analysis then demonstrates that the analytic methods presented so far can help explain just how it is that viewers are kept safely within a particular path of narrative interpretation despite the fact that, as we have suggested and will see in more detail in a moment, the logical relationships that can be recovered between scenes are severely underspecified.

In order to set up the problems faced by a viewer, we first consider the logical relations holding between the sequence of scenes S1 to S4 and the filmic structural organization that these relations establish. The first four scenes of *Memento* are actually particularly clear in that their boundaries are signalled via multiple explicit filmic punctuation and changes in film quality. The shift from colour to black and white together with fade-outs and fade-ins gives the viewer ample opportunity for recognizing that a new narrative segment may be beginning. The shots before and after the transition points are shown in Figure 9, with relatively long periods of black screen given their own shot numbers (16 and 91).

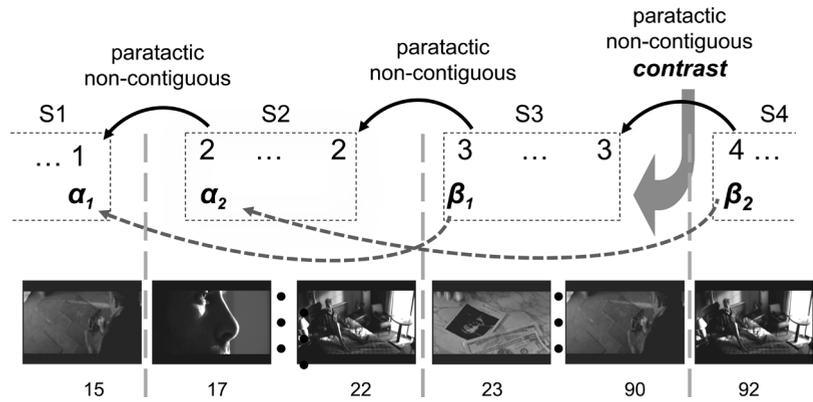
The first scene, S1, is presented in colour and runs behind the opening credits. It depicts events in which the main character, Leonard, shoots dead a policeman named Teddy (Joe Pantoliano). This scene runs in reverse: i.e. the film is actually played backwards (although the sound runs forward to avoid overly disturbing interpretative possibilities). The second scene, S2, is the sequence used in the previous section to introduce our analytic methods. The third scene, S3, then returns to colour and deals with how Leonard drives Teddy to a building where Teddy is shot dead by Leonard. The narrative in this scene therefore directly precedes and then overlaps with that of the first colour sequence. Finally, the second black-and-white scene continues Leonard's voice-over narration in the previous black-and-white scene in the same motel room.

We now consider the classification of the inter-shot relations – exactly as shown for scene 2 earlier, although in the present case we focus particularly on the *boundaries* between scenes instead of relations within scenes. The procedure is the same, however, since it is only the occurrence of coordinating relations between shots that gives us evidence for scene divisions in the first place. Thus, prior to carrying out an analysis of this kind, we would not yet have a formal segmentation into scenes and so there is no formal difference in the analytic steps to be performed.



**Figure 9** Shots before and after scene transitions S1 to S4 (i.e. scenes  $\Omega$ , 1, V and 2 in the scheme used by Klein and Kania).

In the transition from 15 to 17, i.e. from S1 to S2 via a black screen, the viewer can observe that there is clearly a different location involved and, moreover, there is no dependence between the images. This gives us a classification according to the network of Figure 6 of [paratactic] and [non-contiguous]. Little else can be derived. With the shift from colour to black and white there may be a weak cue from generic film conventions of present time to past time ([ellipsis], [back]), but this could certainly not be relied upon at this early stage in the film. The inter-shot relationship is, accordingly, extremely weak – similar to two unrelated images being shown one after the other. This means that there is, in respect to the logical relations between shots, maximal load being placed on the viewer. The situation in the transition from S2 to S3 is similar. There is no indication of location, no temporal relationship and



**Figure 10** Filmic structural organization and conjunctive relations between scenes S1 to S4 (i.e.  $\Omega$ , 1, V and 2) in Christopher Nolan’s *Memento*.

no dependency in visual or aural presentation. This is then again a case of a ‘paratactic,’ ‘non-contiguous’ inter-shot relationship, leaving the viewer with the work of interpretation.

If this were to continue much further into the film, the viewer could well become disoriented. However, by the time we reach the final transition from S3 to S4, information is beginning to accumulate and so interpretations also begin to be constrained. Scene 3 ends in the same way as scene 1, although now running forward in time – itself a neatly structured piece of organization – and scene 4 dovetails with the end of scene 2. Particularly the latter is relevant for logical relation analysis as there is now a clear dependency and strong cues for temporal continuity. Locally this means that scene 3 is a candidate *embedded insert* between scene 2 and scene 4. If scene 1 had been structured more traditionally in relation to scene 3, this would already have provided sufficient cues for a multitracking coordinating relationship ([paratactic], [contrast]) analogous to the Metzian categories of parallel or alternating syntagmas (Metz, 1974a).

Selecting such a paratactic (coordinating) contrast relationship serves to impose structure retroactively on the film. It is only possible to receive enough information to assume a multitrack alternation after four shots and so it is only at that point that the preceding shots fall into place. This holds in the present case, and so with scene 4 the film has already established the two-track alternation that will hold until the end of the film.

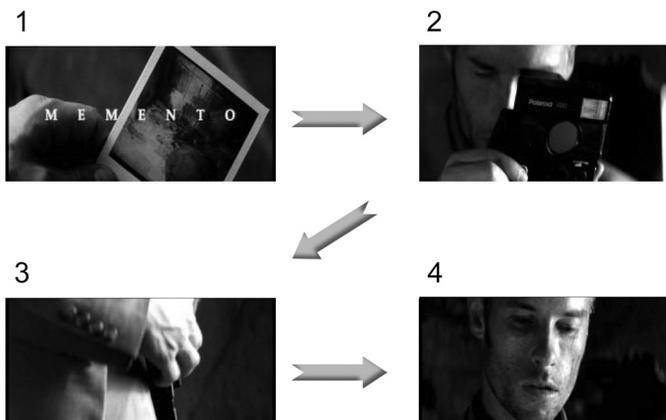
The structural organization is then as shown in Figure 10 where we indicate retroactive structure attribution as follows. In the sequence from S1 to S3 the inter-shot relations are simply coordinating, represented by arabic numerals in contrast to the Greek letters adopted for subordinating relations earlier. In the transition from S3 to S4, the additional classification of ‘contrast’ is motivated (shown in italics in the figure) and this imposes a multitrack consisting of two independent lines of subordinating dependence (shown as

$\alpha_1, \beta_1, \dots$  and  $\alpha_2, \beta_2, \dots$  respectively in the figure). This is a strong organizational structure but still does not supply a well-specified relationship *between* the tracks of the alternation. For further guidance of the viewer, the film also employs *cohesive* resources, as we shall now see.

## ESTABLISHING COHESION CHAINS IN *MEMENTO*

We begin with the first scene, S1 or  $\Omega$  in Kania's scheme, in which several of the narrative elements that will play a role in the scenes to follow are established. Shot 1 in this scene depicts a polaroid photograph held in close-up as credits roll over the image of the photograph. In this shot, a man's back and blood are seen in the photographic image and a hand shakes the photo now and again as the image fades. In the second shot, the identity of the holder of the photograph is revealed – as the story event unfolds backwards, viewers see the hand of the holder move up and apparently feed the photo into a polaroid camera. At the end of shot 2, the camera tracks upwards to a man's face (later identified as Leonard's), showing the main character's face explicitly for the first time. In shot 3, the polaroid camera is seen being put away; and in shot 4, the same man's face is shown again, readily recognizable. Figure 11 shows the key frames of these first four shots.

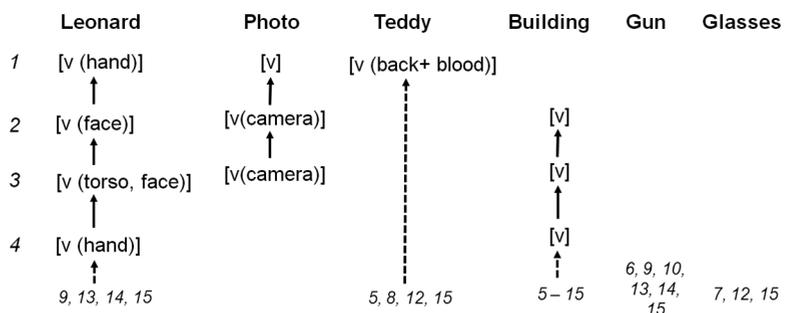
We noted earlier that this scene plays out in reverse and so it is worthwhile briefly setting out how the cohesive organization of the scene nevertheless results in an intelligible sequence of events. For this, the usual strategies of continuity editing, and particularly match-on-action cuts, are mobilized so as to explicitly support the viewer's comprehension. We see this, for example, in the co-referential link between the hand in the first shot, the man who holds the photo/camera in the second shot and the hand that puts away the polaroid camera again in shot 3. The face in shot 4 is also an explicit reappearance of the same face in shot 2; and so on.



**Figure 11** Representative frames of the first four shots of Christopher Nolan's *Memento*.

We can characterize these relationships more precisely, drawing on the possibilities for filmic cohesive identification introduced earlier; indeed, continuity editing of this kind is in many ways best seen as mobilizing filmic cohesive chains as suggested by Palmer (1989) and illustrated nicely in Janney (2010). These strategies provide viewers with referential cues for identifying the reappearance (whether explicit or implicit) of characters, objects and so on, and so provide a strong scaffold for building meaning *independently* of real-world ‘cause and effect’. As we shall see in a moment, this is a crucial contribution of the discourse semantics that undercuts many suggestions made previously that spectators of *Memento* need to pay particular attention when constructing their interpretations.

The further operation of cohesive organization here can be shown by drawing the prominent narrative elements of the scene together into chains in the manner illustrated earlier. Several identity chains tracking narrative elements can be found; these are shown graphically in Figure 12 where, to simplify the discussion, we show just the first four shots in detail and summarize the rest. In total, four chains are introduced within these first four shots: Leonard, photos, Teddy, and the building that provides the setting for the actions played out. The first chain, tracking the identity of Leonard, presents him according to the [mono-modal(visual)] prelude strategy from the network in Figure 3 since, in S1 (scene  $\Omega$ ), it is his hand that is revealed first (holding and shaking a polaroid photograph that is gradually fading out). Continuity then signals the co-referential connection between the visual prelude, the hand, and the explicit presentation of Leonard’s identity in shot 2. The second chain includes elements belonging to the broader category of ‘photo’, encompassing the co-hyponyms of polaroid photos and the camera. The third chain tracks the other main male character of the film, Teddy. His identity presentation also starts with only a physical part (his back and blood presented in the polaroid picture in shot 1), analogously to Leonard’s first identity presentation. However, in later shots, these physical parts are effectively cued with the continuity strategies used throughout this sequence to



**Figure 12** Identity chains operating within the first scene of *Memento* (scene S1 or  $\Omega$  in Kania’s numbering scheme); transcription conventions as earlier.

the revelation of Teddy's identity when his head turns back with his face half visible at the end of the scene.

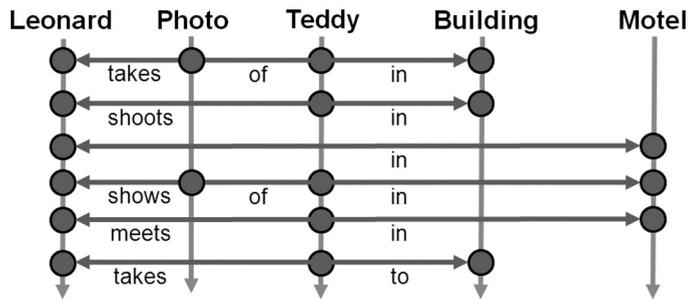
The cohesive chains produced by tracking identities in this way then serve to create 'abstract' narrative configurations that viewers see as arising naturally out of the *texture* of the material presented in the film. Within the first shots of S1, for example, the identity chain of Leonard interacts with the identity chain of the photo by virtue of the many shots where some element on one chain is seen manipulating some element of the other (e.g. by shaking the photo, by putting it into the camera, etc.). There is also an interaction between the photo chain and the Teddy chain by virtue of the photograph being taken. And, finally, all of these chains interact with the chain of the building as it is this latter that provides a common 'setting'. Thus, in summary, these interactions serve to construct a narrative event of the following form, more or less regardless of the temporal ordering employed:

[Leonard] takes a [photo] of [Teddy] in the [building]

From the perspective of narrative construction, this 'understanding' of events is constructed by the cues given in the sequence of shots with little difficulty, despite the scene running in reverse.

In this respect, we can observe a suggestive overlap in intended functionality between our identity chains and Stefano Ghislotti's (2009: 104) invocation of the more psychologically-oriented notion of *mnemonic devices*. The recognition of identity chains by viewers no doubt builds on the kind of associative visual memory that Ghislotti describes, but such associations alone provide insufficient foundation for characterizing the rather precise narrative constructions created as the film unfolds. It is not simply the bare fact that there are repeated motifs that is significant, but rather the mobilization of these devices in the service of filmic discourse systems such as identification and conjunctive relations.

We can see something of the fine detail required when we go on to construct similar identity chains and chain interactions both for the rest of S1 and for the other scenes being analysed here. In all cases, the participation of elements in chains identifies them as being textually significant and their displayed interactions give rise to narrative configurations as interpretations. Thus, we also have in S1 the configuration that Leonard shoots Teddy in the building and, from the identity chains for scene S2 given in Figures 4 and 5 earlier, that Leonard examines his surroundings in some anonymous motel room. Importantly, it must be emphasized here that these are not simple descriptions of what is occurring that we take from our understanding of the film, they are instead *narrative configurations derived directly from cohesive chain interaction*. In this way, we begin to fill out how combinations of technical cues and depicted elements can be grouped to drive meaningful



**Figure 13** Rendition of the identity chain interactions in scenes S1 to S4.

interpretations. We combine this information into an overview of the interactions between cohesive chains for scenes S1 to S4 in Figure 13.

Analysis of the identity chains across the four sequences as a whole therefore reveals how the cohesive ties employed are actually densely interconnected. And it is this that primarily helps viewers across the loosely specified coordinating conjunctive jumps across scene boundaries identified as problematic earlier. For example, the non-continuous insertion of S2 following S1 is unlikely to disturb the narrative comprehension of the viewer, even though the scene depicts a story event totally unrelated and discontinuous to that in the first scene, because at least two cohesive cues ‘carry’ the narrative at this point: the cue of Leonard’s explicit reappearance at the outset and the explicit verbal introduction of the identity of the motel room (see the earlier section and Figure 4). With these explicit cohesive cues, viewers are safely guided to a specifiable track of narrative interpretation as S1 jumps ‘abruptly’ to S2.

Similarly, the beginning of S3, although not directly related to the narrative of S2, starts with a shot of a polaroid photo with Teddy in the image; and following this, another shot of Leonard’s explicit reappearance presented frontally. Hence, again, cohesive devices are mobilized to establish immediately usable co-referential ties. Finally, the return to the black-and-white narrative strand in S4 depicts Leonard in the same motel room again. As in the previous scenes, the identity of Leonard is presumed with little problem because he reappears visually in the most straightforward way. The cohesive ties employed throughout these scenes then operate independently of any issues of observable or derivable ‘cause and effect’ between events. They follow solely from the essential *textual* organization of the film as the discourse unfolds.

## **CONCLUSION: TRANSMEDIAL NARRATIVITY VIA DISCOURSE**

The result of cohesion analysis presented here indicates that the surface complexity of *Memento*’s development is actually bolstered by a dense web of cohesive ties that serve to carry the viewer along during the narrative

comprehension process. We have therefore shown precisely in what ways David Bordwell's (2006: 79) statement – 'Seldom has an American film been so daring and so obvious at the same time' – is strongly supported by the level of analysis that we have introduced. Setting out the cohesive identification cues at work in these sequences clearly illustrates how the film, despite its unconventional sequencing, is actually highly cohesive. As the film proceeds, information is added to identity chains in a way that preserves much of the explicit structuring expected of a narrative, regardless of the fact that temporal sequencing is reversed. The film's seeming complexity and the lack of logical cues between sequences are as a consequence more than compensated by the rich cohesive ties that function as narrative bridges within and across sequences.

This directly argues against any suggestion that *Memento* requires entirely different processes of comprehension; although causal and temporal conjunctive connections are reduced, narrative configurations constructed from cohesive chain interaction are just as effective in providing a framework for holding interpretation together. Noël Carroll (2009: 140), for example, in his contribution to Kania's collection, suggests that the structure of *Memento* requires that viewers engage in an explicitly self-aware process of question-and-answer construction that potentially reveals much about how they would normally, but unconsciously, go about interpreting films. Although in certain respects no doubt valid, this account fails to explain how *Memento* can nevertheless *seem* intelligible even in the face of its apparent complexity.

The focus on causes and effects, on questions and answers, is a common trait of accounts that do not provide access to a distinct level of filmic discourse semantics for organizing the technical cues that a film might be offering. For *Memento*, this leads to seeing the primary narrative function of the reverse chronology as one of making it difficult for viewers to track events as causes and effects of other events. But there are further narrative purposes served by the film's structure. For example, one positive narrative function of the lack of temporal sequentiality is that certain facts about how the characters in the film are interacting with the main character are made very much less accessible. While the deceptions by Natalie and Burt, the motel manager, are explicitly thematized, the information presented by Teddy turns out to be equally distorted – he presents different, or at best incomplete, information each time he and Leonard meet: first he does not know Leonard, then he does; and so on. When examined chronologically Teddy's statements are therefore evident as highly misleading.

Moreover, the various clues presented in the film that Leonard is also lying to himself with acts of post hoc rationalization are also made much less evident. As a case in point, when questioned by Teddy about his expensive car and clothes, Leonard replies without hesitation that he received considerable funds from his wife's life insurance. Although this may be passed over by a viewer as the film unfolds due to the reverse order of presentation, within

the diegesis this scene directly follows on Leonard's murder of a drug dealer, whose clothes and car he has stolen. There is therefore scarcely a character in the film who does not appear to be lying to Leonard, including Leonard himself (Teddy: 'So you lie to yourself to be happy; there's nothing wrong with that – we all do it ...', Scene 22/A). The lack of temporal organization of the film thus places the viewer in the position of Leonard in more ways than just lack of memory of preceding events: the ability to judge the consistency of others' behaviour and statements is also seriously compromised and this, in the last resort, applies equally to judgements made about Leonard. This, crucially, does *not* surface primarily in the form of disorientation or confusion as often proposed – it surfaces instead in the form of an apparent, superficial coherence in the world that in the end turns out to be a fragile construction with major foundational gaps.

We can therefore see *Memento* as presenting an excellent example of the power of filmic discourse. Its narrative interpretation relies crucially on the web of cohesive chains that it constructs within and across scenes rather than on considerations of causes and effects or on interpretations of individual filmic cues or devices – even when a viewer may believe otherwise. Indeed, it is this that sometimes leads to the mistaken impression that the storyline of *Memento* is relatively simple while its narrative structure is complex; the storyline is, in fact, extremely uncertain but this is effectively disguised by the surface cohesion. Without precisely this enabling power of *discourse*, the necessary bridge between technical devices, on the one hand, and filmic interpretation, on the other, cannot be built. We need, therefore, to fill in details of the discourse resources and mechanisms that mobilize technical cues in the service of narrative interpretations in order to provide such a bridge. The networks for filmic cohesion and filmic conjunctive relations we have presented here illustrate in detail some of the resources that may help this process of meaning attribution work – even when viewers are denied more obvious cues of causation and time.

## ACKNOWLEDGEMENTS

The work in this article was partially funded by the German BMBF (Federal Ministry for Education and Research) as part of the project *Bild–Film–Diskurs* (01UA0813A). The authors also thank two anonymous reviewers for their helpful suggestions.

## NOTE

1. For extensive collections of further references and discussion points, see the unofficial and official *Memento* websites, e.g. <http://www.christophernolan.net/memento.php>, <http://www.otnemem.com/>, as well as Bragues (2008), Little (2005), Runge (2008) and Sibielski (2004).

## REFERENCES

- Altman, R. (2008) *A Theory of Narrative*. New York: Columbia University Press.
- Bateman, J.A. (2007) 'Towards a *Grande Paradigmatique* of Film: Christian Metz Reloaded', *Semiotica* 167(1/4): 13–64.
- Bateman, J.A and Schmidt, K.-H. (2012) *Multimodal Film Analysis: How Films Mean* (Routledge Studies in Multimodality). London: Routledge.
- Bellour, R. (2000) *The Analysis of Film* (a collection of essays originally published in French in the 1980s). Bloomington: Indiana University Press.
- Bordwell, D. (1985) *Narration in the Fiction Film*. Madison: University of Wisconsin Press.
- Bordwell, D. (2006), *The Way Hollywood Tells It: Story and Style in Modern Movies*. Berkeley: University of California Press.
- Bordwell, D. (2007) *Poetics of Cinema*. London: Routledge.
- Bragues, G. (2008) 'Memory and Morals in *Memento*: Hume at the Movies', *Film-Philosophy* 12(2): 62–82. URL (consulted 5 October 2011): <http://www.film-philosophy.com/2008v12n2/bragues.pdf>
- Branigan, E. (1984) *Point of View in the Cinema: A Theory of Narration and Subjectivity in Classical Film* (Approaches to Semiotics 66). Berlin: Mouton de Gruyter.
- Buckland, W. (2009) 'Introduction: Puzzle Plots', in W. Buckland (ed.) *Puzzle Films: Complex Storytelling in Contemporary Cinema*, pp. 1–12. Chichester: Wiley-Blackwell.
- Carroll, N. (2009) '*Memento* and the Phenomenology of Comprehending Motion Picture Narration', in A. Kania (ed.) '*Memento*', *Philosophers on Film*, pp. 127–46. London: Routledge.
- de Saussure, F. (1959[1915]) *Course in General Linguistics*, ed. Charles Bally and Albert Sechehaye, in collaboration with Albert Riedlinger; trans. Wade Baskin. New York: McGraw-Hill and the Philosophical Library.
- Ghislotti, S. (2009) 'Narrative Comprehension Made Difficult: Film Form and Mnemonic Devices in *Memento*', in W. Buckland (ed.) *Puzzle Films: Complex Storytelling in Contemporary Cinema*, pp. 87–106. Chichester: Wiley-Blackwell.
- Halliday, M.A.K. and Hasan, R. (1976) *Cohesion in English*. London: Longman.
- Halliday, M.A.K. and Matthiessen, C.M.I.M. (2004) *An Introduction to Functional Grammar*, 3rd edn. London: Edward Arnold.
- Hasan, R. (1984) 'Coherence and Cohesive Harmony', in J. Flood (ed.) *Understanding Reading Comprehension: Cognition, Language, and the Structure of Prose*, pp. 181–219. Newark, DE: International Reading Association.
- Heath, S. (1975) 'Film and System: Terms of Analysis, Part I', *Screen* 16(1): 7–77.

- Hjelmslev, L. (1961[1943]) *Prolegomena to a Theory of Language*, trans. F.J. Whitfield. Madison: University of Wisconsin Press.
- Janney, R.W. (2010) 'Film Discourse Cohesion', in C.R. Hoffmann (ed.) *Narrative Revisited: Telling a Story in the Age of New Media* (Pragmatics and Beyond Series 1999), pp. 245–66. Amsterdam: John Benjamins.
- Kania, A. (ed.) (2009) *Memento, Philosophers on Film*. London: Routledge.
- Klein, A. (2001) 'Everything you wanted to know about "Memento"', Salon.com Arts & Entertainment, 28 June. URL (accessed 10 April 2010: [http://archive.salon.com/ent/movies/feature/2001/06/28/memento\\_analysis/index.html](http://archive.salon.com/ent/movies/feature/2001/06/28/memento_analysis/index.html))
- Koch, C.H. (1970) 'Understanding Film as Process of Change: A Metalanguage for the Study of Film Developed and Applied to Ingmar Bergman's *Persona* and Alan J. Pakula's *The Sterile Cuckoo*', PhD thesis, University of Iowa, UMI Microform, Ann Arbor, MI.
- Kress, G. and van Leeuwen, T. (1996) *Reading Images: The Grammar of Visual Design*. London: Routledge.
- Kress, G. and van Leeuwen, T. (2001) *Multimodal Discourse: The Modes and Media of Contemporary Communication*. London: Arnold.
- Little, W.G. (2005) 'Surviving Memento', *Narrative* 31(1): 67–83.
- Martin, J.R. (1992) *English Text: Systems and Structure*. Amsterdam: John Benjamins.
- Metz, C. (1974a) *Film Language: A Semiotics of the Cinema*, trans. Michael Taylor. Oxford: Oxford University Press.
- Metz, C. (1974b) *Language and Cinema* (Approaches to Semiotics 26), trans. Donna Jean Umiker-Sebeok. The Hague: Mouton
- Palmer, R. (1989) 'Bakhtinian Translinguistics and Film Criticism: The Dialogical Image?', in R. Palmer (ed.) *The Cinematic Text: Methods and Approaches*, pp. 303–41. New York: AMS Press.
- Roth, L. (1983) *Film Semiotics, Metz, and Leone's Trilogy*. New York: Garland Publishing.
- Runge, I. (2008) *Zeit im Rückwärtsschritt. Über das Stilmittel der chronologischen Inversion in Memento, Irréversible und 5 x 2*. Stuttgart: Ibidem.
- Sharff, S. (1982) *The Elements of Cinema: Towards a Theory of Cinesthetic Impact*. New York: Columbia University Press.
- Sibielski, R. (2004) 'Postmodern Narrative or Narrative of the Postmodern? History, Identity, and the Failure of Rationality as an Ordering Principle in *Memento*', *Literature & Psychology* 49(4): 82–100.
- Tseng, C. (2008) 'Cohesive Harmony in Filmic Text', in L. Unsworth (ed.) *Multimodal Semiotics: Functional Analysis in Contexts of Education*, pp. 87–104. London: Continuum.
- Tseng, C. (2009) 'Cohesion in Film, and the Construction of Filmic Thematic Configurations: A Functional Perspective', PhD thesis, Faculty of Linguistics and Literary Sciences, University of Bremen.

- Tseng, C. and Bateman, J.A. (2010) 'Chain and Choice in Filmic Narrative: An Analysis of Multimodal Narrative Construction in *The Fountain*', in C.R. Hoffmann (ed.) *Narrative Revisited: Telling a Story in the Age of New Media* (Pragmatics and Beyond 199), pp. 213–44. Amsterdam: John Benjamins.
- van Leeuwen, T. (1985) 'Rhythmic Structure of the Film Text', in T.A. van Dijk (ed.) *Discourse and Communication: New Approaches to the Analysis of Mass Media Discourse and Communication*, pp. 216–32. Berlin: Walter de Gruyter.
- van Leeuwen, T. (1991) 'Conjunctive Structure in Documentary Film and Television', *Continuum: Journal of Media and Cultural Studies* 5(1): 76–114.
- van Leeuwen, T. (2005) *Introducing Social Semiotics*. London: Routledge.

### **BIOGRAPHICAL NOTES**

CHIAOI TSENG is an Assistant Researcher at the Faculty of Linguistics and Literary Science, Bremen University. Her research interests include film analysis, multimodal discourse and genre. She recently completed her doctoral dissertation entitled 'Cohesion in Film, and the Construction of Filmic Thematic Configurations: A Functional Perspective'.

*Address:* Faculty of Linguistics and Literary Sciences, University of Bremen, Bibliothekstrasse 1, Bremen 28334, Germany. [email: chiaoi@uni-bremen.de]

JOHN BATEMAN is a Full Professor of Applied Linguistics at the University of Bremen and has been applying mechanisms of discourse interpretation to film for several years. He is head of the Bremen University doctoral training research group on the 'Textuality of Film' and has published articles on both the theoretical foundations and practical analysis of static and dynamic multimodality.

*Address:* as Chiaoi Tseng. [email: bateman@uni-bremen.de]