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The Turn to the Mind, Inside and Out

- **»Imagining Minds: Cognitive Approaches to Narrative, Embodied Simulation, Metaphor and Complex Tropes.« Vienna, May 21 to 24, 2008.**

Michael Kimmel and Thomas Eder brought together established experts and younger researchers at the University of Vienna in May 2008 to reflect on and contribute to the »cognitive turn«, a major development in recent cultural theory and criticism. This turn, as the conference program said, grounds literary reception in general human psychology and everyday knowledge without losing sight of the specificity of literary aesthetics. It addresses central topics of literary structure and response in new ways. I will briefly contextualize the conference's themes, review the papers and comment on them, then discuss them in light of some recent debates in the *Journal of Literary Theory*.

Overview: Turn, turn, turn

Reflection on this or that intellectual »turn« should proceed warily. The metaphor of a change in direction turns a complex reality of many diverse activities and people into something conveniently unified and concrete. This invites conjecture about »its« nature, origins, and direction; but more important is the development of new ideas into approaches and research programs. With these caveats, we might for convenience distinguish stages of an interdisciplinary turn. Early work shows the value of applying certain ideas to literary study, establishing some practical paradigms and contrasting them with existing frameworks. Then further applications confirm and diversify the approach, and defend it against broad »external« criticisms. The conference embodied a third stage, where scholars tend toward internal criticism, identifying more specific problems with the applications and the frameworks, and work on improving, extending, and testing them.[1] This pattern is too neat, but I think it also approximates the course of individual intellectual development, and so may approximate general thinking as more individuals shape a turn.

The Conference

Recent surveys observe that there has been little interaction between cognitive studies of metaphor and of narrative.[2] The conference stepped in here and introduced new efforts to examine the interaction of literary elements (emotion, attention, foregrounding, genre, mode, media) and the combination of frameworks. Theoretically, there were challenges to and refinements of the Lakoff/Johnson theory of metaphor, and its literary applications; and developments of aspects of cognitive narratology, especially with reference to the concept of *simulation* (using the cognitive systems involved in experiencing events to imagine them offline; mirror neurons are thought to play a role here). Emotion entered this rethinking, often as part of simulation, and/or metaphor and narrative. An important aspect of these challenges was methodological. Many scholars studied response empirically, developing testable hypotheses, and testing them with real readers. Others presented familiar theoretical/critical analyses backed up with case studies. Although there was some reference to 18th and 19th century literature and other languages, a notable preference emerged for fairly short 20th century English works: popular ones congenial to common readers; and experimental ones to test theories of literary structure and processing.

I divide the conference papers into four groups, each conjoining an aspect of form with an aspect of response: narrative and emotion; narrative and metaphor and emotion; narrative and understanding; and mappings across modes and media.[3]

Narrative and Emotion

David Miall's keynote speech, »Narrative Feelings and Their Cognitive Implications«, explored some consequences for the psychology of literary reading of a »second cognitive revolution«, which stresses the primacy of emotion: rather than emotions resulting from cognitive appraisals, cognitive processing without emotion is seen as deficient. He identified various kinds of literary feelings (e.g. evaluative, aesthetic, narrative); emphasized that we seek heightened emotion in art through character empathy and stylistic appreciation; and discussed how feeling guides literary experience and understanding. On an »enactive view«, emotions are not simple reactions to experience but rather constitute a continuously modified background helping us understand and act on the world. They have aims, and are involved in anticipation and planning and the sense of self. Language in an »immersed experiencer framework« is a set of cues to create an experiential simulation. Miall considered literary reading in this light. Stylistically foregrounded passages are often also emotionally heightened, and Miall's studies show that foregrounding slows reading. Emotion has analogical power, helping to connect foregrounded passages with personal themes, which may prompt self modification. And it guides action imagery: action commands are a key to consciousness, and states of action readiness are key to emotions; but in the arts (and dreaming) action is inhibited, so emotion becomes conscious as imagery. Miall closed by replying to Kelleter's critique of »neonaturalist« approaches – that they merely give a »neuroscientific facelift« to familiar formalist and narratological concepts, adding nothing to textual analysis and that they can't back up their »scientific« aspirations to ground culture in biology – that cognitive science offers an important »map of affordances« to complement traditional literary study.[4]

Rebecca Gordon's »Remakes, Genre, and Affect: The Thriller/Chiller/Comedy as Case Study« used Silvan Tomkins' theory of affective scripts to argue that genres develop via affective development – thus linking a »personalistic psychology« to »negotiations between form, genre and historical context«. For Tomkins, cognition is affective. We »learn« how to experience and recognize affects as we repeatedly experience affect laden scenes, and link them into sequences. Film scene sequences similarly »develop toward a particular [affective] payoff«. Gordon traced the genre's evolution as an affective education (by makers, remakers, and audiences). Scene/affect links are forged, and ordered in a certain way: a surprise/fear/humour arc gives rise to thriller/chiller/comedy. As later films repeat earlier sequences, they sink into memory as a conventional form/feeling script. The visual innovations of expressionist Paul Leni's 1927 *The Cat and the Canary* influenced directors, but viewers struggled to reconcile them with the conventional melodrama plot. Remakes help viewers expect and anticipate feelings, »attuning« them to a genre's emotional shape. As audience feelings strongly influence film genres, the metaphor of genre as »contract« is apt.

Matthias Springer's »Humor and Narratives: Beyond Narrative Schematizing Or a Well Defined Exception to It?« argued that humorous narratives subvert narratologists' definitions of a normal event as transforming an object to an inverse of its initial state. For example, a mighty effort that fails to wake a sleeper seems to be an event without a full change of state.

Humour may have no specific narrative structure; instead, audiences may use a »cognitive template of humour«, initialized by emotion, to recognize when and how rules seem to be fulfilled, but in a counterintuitive way, creating incongruity. Springer proposes a »formalized description of mental models« for such humour, and tests his hypothesis about the relation between humour and mental representation of narrative by correlating the results of two tests. One test asks subjects to code states of objects involved in story events at two key points, and classify the relation of the coding terms (as inverse or not); another asks about humorous emotions and effects while reading.

Jan Auracher's »How to Measure Attention: Biopsychological Approaches to Literature« described a project testing the influence of linguistic deviation on attention. The traditional idea is that unusual language creates new sensations and insights that highlight and unsettle automatized attitudes. Attention, arousal, etc. are activation states affecting information processing, but lacking specific information. Research confirms that deviations draw attention, but this is difficult to assess through introspection. Auracher reviewed an experiment which offered a way to link these two variables. Turning to neuropsychological measures, he recorded readers' electroencephalograms (EEGs) while they listened to texts with statistically more or less deviation. Higher deviation texts were found to have a greater potential to sustain higher attention, even given prior knowledge of plot. Listeners to Haruki Murakami's short story *Super Frog Saves Tokyo* who had read a plot summary had higher attention, with less variation over the course of the story, than those with no summary. Auracher suggested this reflected different kinds of attention – i.e. to plot vs. stylistic qualities. There was some discussion over the »statistical significance« of the results.

I was glad to see the papers in this group begin to address the kinds of complex emotions literature often presents; some earlier studies deal with relatively simple feelings. Yet, as they generally use research on real life emotion to study literary emotion, they should consider issues arising from the fraught relations between life and art.[5] First, to the extent that emotion is seen to involve simulation, a problem arises with fantasy stories and emotions that cannot be straightforwardly experienced. Do we use some form of imaginative composition, or generalization, of experiential correlates? (For dragon battles, we have our experience of fighting + wild animals; for Gregor Samsa turning into an insect, we have our experience of insects, including disgust, though presumably insects do not experience self disgust). Second, there are conventional emotions and attitudes that go with conventional stories (courtly love, Gothic horror). How are these learned, how do they relate to »natural« emotions, and how do they affect literary response? Culture is also natural in a sense, and conventional but real emotions in cultural life (e.g. in rituals) might throw light on the matter. Third, there was little mention of the role of variable contexts in emotional response – such as reader expertise, reading purpose (for fun, for study, etc.), situation, personal preferences, mood, worldview etc. Rereading (or re-experiencing) is significant here too: the difference between first and later encounters may suggest »experiencing« and »interpreting« literature are continuous – a potential problem for the debate in this journal over the proper focus of literary research.[6] No doubt future elaborations of these projects will address these and other complexities.

Narrative and Metaphor and Emotion

Michael Kimmel reported on two aspects of a University of Vienna project investigating the import of the »cognitive linguistic toolbox« for narratology.[7] The team examines how readers simulate literary stories, stressing that they are embodied – »imagistic, kinaesthetically grounded, and affective«. Think of a battle scene: opposing physical forces are resolved after a great clash, and the rhythms of character and reader emotions similarly lead up to and away from this climax. He first discussed the two main issues in discerning the relations among formal text structure, storyworld structure, and experiential gestalts: what kinds of embodied/conceptual phenomena are there? And what are the textual patterns that cue those states/concepts? Linguistic methods do not translate straightforwardly into narrative analysis, so they combine »text linguistic and narratological resources«. They coded English novellas for a.) »simulable textworld events« involving bodily experience of protagonists, and b.) »simulation enhancing stylistic devices« such as emotion metaphors or rich descriptions evoking affect (but where the source domain is not part of the storyworld). Analysis can reveal several qualitative kinds of embodiment in each of the two broader categories. Kimmel challenged habitual assumptions, arguing that metaphor embodiment has levels and degrees of »intensity and quality« (including disembodiment). He sketched »a typology of possible relations between textworld and affect structure in the reader's body«, from mirroring or quasi veridical (e.g. using breathing experience to simulate breathing described in the storyworld), to iconic (e.g. Ellen Esrock's example of mapping windpipe airflow to simulate experience of falling cued by the text), to arbitrary activation, where there is no similarity between textworld and affect structures, as in a pattern of breathing built up regardless of the text, or a purely personal connection (e.g. a more vivid response by skydivers to descriptions of falling). Image schematic structure is important here, and the Emotion as Force mapping recurs.

Kimmel's later discussion stressed their search for higher order relations within and between patterns of metaphor and narrative, and links between theories of metaphor and narrative. In linguistic metaphor research, conceptual metaphors are coherent insofar as their source domains have overlapping structure and entailments (e.g. Argument as Journey, Container, and Building all have »content defining surfaces«). Also, complex concept systems are often structured by linking overlapping source domains (e.g. Lakoff and Johnson's Morality system).[8] Kimmel argued that metaphor analysis can clarify theme structure, protagonist characterization, psychological dynamics, actant roles, plot structure and megametaphor, and polyvalence. Linking coherence patterns from across a text can reveal thematic relations in story logic, such as complementarity, opposition, and ambiguity. Further, key scenes are often saturated with metaphor. Again, FORCE DYNAMICS is a master trope for EMOTION in English. James's *The Turn of the Screw* illustrates some *order* to metaphors: it uses an emotion script in having the protagonist try and fail periodically to bottle up emotions to maintain control. In Le Fanu's *Carmilla* a metaphor of vampirism as ENERGY DRAINING helps connect metaphors in different domains: losing energy involves dimming sight and weakness, and difficulties with one affect the other.

Ronald Kemsies's »From Detailed Coding of Metaphors to Authorial Metaphorizing Strategies« observed deficiencies in cognitive poetic analyses of metaphor. They can be unsystematic and impressionistic, neglecting techniques of empirical metaphor identification. And they can fail to encompass whole texts, exploring metaphors separately, and sticking to one level of specificity. Thus, important metaphors may be overlooked; and metaphor interaction, textual cohesion, and authorial metaphorizing strategies are obscured. A comparative stylistic perspective could clarify literature's functions and its enrichments of everyday metaphor. To this end, Kemsies introduced computer assisted methods for systematically coding stories on all metaphorical, imagistic or embodiment related cues (that is, »letting the text do the coding«); then illustrated the (qualitative and quantitative) analysis of metaphor patterns. To include context, they code at the level of the clause or sentence, not the word, and at multiple tiers – e.g. a layer for image schemas (PATH, COLLISION), and a layer for cultural knowledge (ship, iceberg). Source and target domains are coded separately. Such fine grained coding enables analysis of various patterns (image schemas; synesthesia; concrete vs. general mappings). They assume that frequency correlates with importance, and count density (metaphors per word), and diversity (total mappings). Patterns of authorial style appear at this level, in the distribution and variation of metaphor types.

The University of Vienna project's study of the metaphoric structure of whole narratives importantly works toward synthesizing textual factors and frameworks that have heretofore been separate. Metaphor, narrative, emotion, and simulation must be coordinated in the creation and reception of the arts, and perhaps human psychology generally. So research on that coordination strikes me as highly significant and long overdue.

Kimmel's second paper ingeniously linked metaphors based on links across experiential domains represented in the storyworld (e.g. between *dimness of vision* and *bodily weakness*). Unlike everyday linguistic metaphor, storyworlds can create new inferences by specifying source domain details, and by highlighting causal links between them. On the other hand, they may be less free to mix source domains, due to pressure to create consistent images. Lakoff and Turner say it is an error to define a metaphor by the source domain only,[9] but in literature a single source can map to multiple targets. That is, the meaning of »downhill« – as easy movement, or as failure – depends on its target, and in a given expression we usually mean one or the other. But the aspects need not conflict, and literary metaphors may draw on both. Dante's Inferno combines these consistently, framing the ease of slipping downhill as related to its badness.

Questions remain about just what a complete analysis of this kind would look like, and what it can and cannot do. Miall suggested that the method might (for example) investigate the kind and development of metaphors in Gothic novels. The spectrum of embodiment, especially the idea of disembodied metaphor, needs clarification. And the diachronic development of metaphors in narratives might be a challenge. Moreover, metaphor frequency need not always correlate with importance: a rare and novel metaphor at a key moment could be very important. (Popova argued that title metaphors are often difficult and elusive.) Or, if embodied as part of the storyworld, metaphors need not be mentioned often. And it was recognized that the subjective element in the coding process seems ineliminable.

Margarete Rubik's »Feeling by Proxy: Descriptions of Pain and Love in English Literature« investigated the stylistic means by which literary descriptions can evoke (or block) empathic pain and love in readers. Both pain and love have a cognitive, evaluative dimension (but only desire is goal oriented); both also show bodily symptoms. Rubik argued that texts prompt us to imagine the eliciting conditions for these feelings, because in the brain, imagining, like perceiving, is psycho-physiological. Empathy is affected by personal and social commonality: if readers share a character's experience or »in group«, empathy is supported, while alien social categories or worldviews can cause revulsion. There is more language for love than for pain, and their limited range of metaphors shows interesting source domain overlap: pain is heat, madness, a wild animal, an enemy, stabbing, torture; love is fire, hunger, madness, an animal, a force, war. Both emotions are subject to display rules (varying by class, age, gender, culture): voicing either is hedged about with decorum and taboo, and this colours response to literary descriptions too. Generally, hyperbole is unseemly for pain, but acceptable or expected for love. However, response depends on reader willingness to inhabit the text world empathically, and thus on a »web« of factors such as style, irony, viewpoint, and character portrayal.

Rachel Giora's »Is It Really the Metaphoric that Is Pleasing? On the Aesthetic Effects of Optimal Innovation« disputed Aristotle's claim that it is the freshness of metaphor that we find agreeable or uplifting. She presented arguments and experimental findings supporting her view that it is »optimal innovativeness«, rather than figurativeness per se, that pleases us. Optimally innovative discourse offers at least two different meanings, one familiar/salient and one novel (less or nonsalient). In her experiments, subjects rated expressions of varying degrees of innovativeness for pleasurability. For example, »body and sole« (optimally innovative) was rated as more pleasing than »body and soul« (not innovative, but second in pleasurability), »bodies and souls« (not innovative enough), and »Bobby and Saul« (too innovative and least pleasing). It is the »familiarity in the unfamiliar« that creates the pleasure, part of which seems to be found in resolving the challenge of optimal innovation. However, higher aesthetic effects exact a cost: they require longer processing time.

These papers contrast interestingly in their approaches to the contextual conditioning of cognitive processes. Giora's empirical approach could better specify how her chosen cognitive factors relate by setting aside context. Presumably aesthetic pleasure has more dimensions than this familiarity/innovation polarity (an optimal phrase might be offensive in some way). And relative innovativeness must depend on the discourse and the subject: »Bobby and Saul« might be just right in *Finnegans Wake*, or in a joke where »body and soul« has been primed somehow. Rubik noted points of interplay of bodily, cognitive, cultural and personal factors, but left one wondering about the details.

Narrative and Understanding

Brigitte Rath's »Schema Theory and Narratology: Modeling Narrative Understanding« explored the explanatory powers and problems of the idea of a general schema for story processing, arguing that it helps locate »narrativity« in the reader instead of the text. The schema involves such elements as: abstract, orientation, exposition, initiating event, goal, complicating action, and resolution. She considered how schema theory can cross media boundaries; how narrative structure relates to experience; and the idea of a »narrational schema«. There are challenges in characterizing schemas (especially detail variation); and determining the story schema's generalizability. She proposed modifications to address current problems in narratology: in story processing, schema change is essential (not a mistake); default values can be vague; restrictions can be introduced; and »wrong« fillings in can be recalled. Rath claimed that the variables of rules, characters/objects, and events suffice for all narrative understanding. She illustrated her model in a close analysis of the opening of C. S. Lewis's *The Lion, the Witch, and the Wardrobe*.

Yanna Popova's »Metaphor and Text Cohesion: What Holds a Narrative Together?« saw narrative thinking as the ability to organize events into meaningful coherent wholes, hence as basic to grasping causality, agency, and lives in time. She addressed fundamentals of physical event perception, outlined its continuities with narrative conceptualization, and discussed the role of metaphor in creating narrative coherence. An »event« is a segment of time at a location, perceived to begin and end. As with *object* perception, events have boundaries, partonomies, etc. But events can be momentary or protracted, and difficult to categorize, so they may have a »basic level«. Perception of causality is key to event structure. We perceive causality directly; and divide activities at points of maximal physical change. Movement and embodiment are central to narrative too. But as time scale increases, events become more intentional than physical. Popova considered bridges between direct cognition and complex narrative thought in borderline cases (three line fictions, memory, dream, TV broadcast). Cognition seeks coherence, and in narrative this means linking goals, actions, and outcomes. Narrative is defined by a *macrostructural goal*, often represented in metaphors, often in titles, and often elusive, original, and challenging.

Michael Sinding's »Conceptual Blending in Genre Transformation: The Evolution of Epistolarity« started from the ideas that genres are multidimensional schemas and that genre mixture can be analyzed via conceptual blending theory. Blending theory is a general model of meaning construction as integrating concepts from multiple sources, which applies well to creativity. He examined the epistolary novel as a product of two blends, one for the letter, which blends a schema for conversation with a schema for writing in a »situation of separation«, and another blending the letter with the novel. Blending starts from shared structure, and he proposed a general model of genre as three nested frames: socio-cognitive action encompassing rhetorical situation encompassing discourse structure. The analyses then sought to specify the triple frames for the »input« schemas; and also the processes of composition, completion, and elaboration. A letter is a blend of a single »turn« with a whole conversation; the epistolary novel collects and arranges letters to convey an overarching action.

Thomas Eder's »Self Attribution, Introspection, and Narratology« addressed how »Theory of Mind«, the ability to infer the thoughts, perceptions and feelings of others, underpins literary writing and reading. Eder compared some »state of the art« studies of ToM by cognitive scientists and philosophers with uses by literary scholars (some of which are hardly complex enough). He questioned the claim in cognitive narratology that the difference between ascribing mental states to others and to ourselves is negligible. These might be two independent capacities, or one might be based on the other. He sketched two theories of attribution: in »theory theory« attribution is based on reasoning; in mental monitoring it's based on direct detection (of self and others). Eder examined passages of Virginia Woolf's *To the Lighthouse* to consider Auerbach's observation that Woolf expresses self knowledge as if from a third person perspective. He then considered possible consequences for narratology of a categorical difference between first and third person mindreading.

I believe that in this area there are shared concerns with defining narrative, and narrativity. Although it's necessary to exclude much in order to treat a focus in depth, many factors do interact, and the approaches here might connect in various ways, to better explain how we draw on many cognitive resources together to understand stories and judge narrativity. We use many kinds of schema – for familiar experiences and roles, genres, and narrative in general – to recognize mental states (of both characters and authors) and event causes particular to a story, and to grasp a text as a coherent causal and thematic whole, and also as a creative act. Almost any story requires all of these, and a single incident can call on and interrelate all factors at once. Emotion has a role here too. Like causation, it is built into or implied in schemas. It helps define genres (e.g. tragedy vs. comedy), and narrative as such: goals and intentions are related to desires, and emotions are bound up with the success or failure of plans and actions. So there is good reason to develop these studies by connecting them with emotion studies as well.

Moreover, cognitive approaches in part renew formalist and structuralist ones, and they should anticipate the inevitable return of certain questions. Against the bias in cognitive criticism »toward synchronic over diachronic accounts«, Richardson urges cognitive narratological work on literary history and ideology critique.[10] And then there is the difficulty of generalizing about the vast ever changing diversity of stories and genres. We should expect that any narrative or genre schemas or theories will need modifications and additions; and must examine how such schemas change, blend, and fit into systems. Schemas and other cognitive concepts are more flexible and richer than the structures of the structuralists, and this potential should be tapped (as Rath argued).

Mappings Across Modes and Media

Yeshayahu Shen's »Heard Melodies Are Sweet: Cognitive and Linguistic Aspects of Synaesthetic Metaphors« saw cognitive poetics as seeking a cognitive account of features of poetic discourse. Text structure may either interfere with or conform with cognitive processes. Interference can deform normal processes, causing aesthetic effects. Cognitive conformity promotes intelligibility (so interference is constrained), but it is less studied. Analyses in Shen's »Cognitive Constraints Theory« (CCT) have three steps: 1. define a set of structural options for some poetic feature (e.g. types of rhetorical figures); 2. examine the distribution of those options in poetic corpora; 3. develop a cognitive account of that distribution (using psychological experimentation), assuming that the more frequent structure is the simpler one. For the key example of synaesthetic metaphor, Shen identifies a sensory informational hierarchy (touch – taste – smell – sound – sight); so the two options are mapping lower source to higher target or vice versa. A lower > higher tendency (sweet > silence, cool > darkness, etc.) has been observed, and Shen elaborates on 1. its universality (across genres, languages, periods); 2. its influence on other linguistic processes; 3. its basis in cognitive simplicity. Shen criticized other accounts of the pattern, explaining it via the typical concrete to abstract mapping pattern: lower sensory terms are more immediate, concrete, experience based, »embodied« perceptions, while higher are more object based. Predictions based on this idea are borne out in many studies: linguistic history shows low-to-high meaning extension, and such forms are easier to interpret and contextualize, and preferred as natural.

Makiko Mizuno's »Analysis of Experimental Poetry Using the Methodology of Cognitive Poetics: A Case from Concrete Poetry« brought the analysis of blended metaphoric text structure to experimental literature. Such work needs a multimodal methodology because of the impact on it and perception generally of the »radical change in the media environment«. Recent trends such as literary texts in multimedia formats, and modern fine arts using text, require a synthetic method that can handle the interrelation of perceptual and media modes. Mizuno seeks to »verify and modify« Masako Hiraga's study of the »interplay of iconicity and metaphor« in Haiku. The concrete poetry prevalent in the 1950s to 1970s works with the visual appearance of words as well as their meanings. This has special relevance to Kanji, the iconic Chinese character as used in Japanese. She presented a number of examples (by Eugen Gomringer, Tim Ulrichs, Pierre Garnier, Heinz Gappmayr, and Shinich Niikuni), in each of which one input space was a visual pattern, and another was a word's semantic meaning.

Sybille Moser's »DAYS GO BY, ENDLESSLY. Metaphors of Time in Laurie Anderson's *White Lily*« also noted the multimodality of conceptual metaphors and hence their potential to relate media theory to semiotics. She aims to clarify »crossmodal representation« by analyzing how Anderson's performance simultaneously enacts different semiotic models of temporal experience through lyrics, music, gesture, and animation. Visual, acoustic, and conceptual iconicity are three levels of symbolism, differently manifested in (and suited to) different media. Within this framework, Moser analyzed, and synthesized, elements of *White Lily*. She noted correlations at three levels: music with the walking of an animated blue figure; prosody with Anderson's back and forth motion; and verbal sound (the words »white lily«) with her stopping. Perceptual integration maps simultaneously across all modalities to create new meaning. Anderson's gestures enact the metaphor of Time as Motion. Each word is synchronized with a gesture, such that the Future is in front, and the Past is in the back. But she enacts both an Observer orientation (»days go by«), and an Object orientation (»pulling you into the future«). Thus perceptual integration shapes conceptual integration, and the concrete enactment of metaphors can defy the idea of time as progression. This supports a cognitive semiotic view that icon, index, and symbol share a continuum. Thus signs in different media can »work as metaphors for each other« and manifest the »cross modal integration of experience«.

If Shen is correct that more frequent patterns are simpler, and if cross modal mappings are (as it seems) fairly rare, then there may be something especially complex about them. There may be special demands in finding the conceptual significance of percepts as such (apart from their roles in abstract, subjective, or narrative structures). Then too, cross modal works, as opposed to unidirectional mappings, have more channels for interference among inferences (there was a longish debate over Anderson's exact metaphors). The more familiar multi modal art forms (theatre, film, dance) need not prompt tight symbolic integration, though there is often a vague sense of aspects »matching«.

One wonders how these phenomena relate to ordinary perceptual integration or »binding«. Some have suggested parallels or links between binding and conceptual blending.[11] But binding is perceptual and preconscious, and seems not to involve iconicity, or metaphoric cross domain mappings. Still, a shared or similar brain mechanism would be economical. Binding may be related to synaesthesia, which is also preconscious and non iconic (e.g. sound/colour links are not *symbolic*). There are parallels to synaesthesia in ordinary, quasi iconic cross modal associations. Ramachandran links metaphor and even the origin of language with evidence for »natural constraints on the ways in which sounds are mapped on to objects« plus a »sensory to motor synaesthesia« (e.g. dance matches music to movement). Similarly, Gibbs and Colston cite evidence that synaesthesia »may rest on a universal understanding of cross modal equivalence. [...] people do make systematic connections between dimensions of specific modalities, for example, soft and low pitched sounds are associated with dim or dark colors«.[12]

While Shen looked at how sensory concepts map onto one another, Mizuno and Moser considered how multiple modes in concert map aspects of a complex idea (so synaesthesia was an enabling but background factor). The question arises of how Shen's conclusions might be used to study orders and directions of mapping in »simultaneous« multimodal art forms, and what significance possible exceptions at that level have for those conclusions. Here Spolsky's view of art as building on our need and ability to map the world by creatively bridging gaps across sensory modules is pertinent.[13] These cross modal studies might also illuminate the nature of iconicity and the »form/content« relation across the arts. Unlike content, form lacks definite implications for inference.

Conclusions

I would like to sketch the advances and blind spots of the conference's work in relation to cognitive literary studies generally, then consider in more detail the central theme of empirical cognitive poetics. After illustrating some of its benefits (theoretical and practical), the kinds of questions it raises, and its broader implications for cultural study, I will discuss the issue of science/humanities interdisciplinarity.

In relation to the overall enterprise of the cognitive study of literature and culture, the conference stressed empirical approaches to themes of deviation, foregrounding and literariness; cross modal interaction; embodiment and simulation; and emotion and feeling. Most notably, the steps made in linking metaphor with narrative, and both with emotion, should inspire further interanimating research. Discussion revolved around metaphor/stylistics more than narratological questions, and much work remains to be done on comparing and integrating these and related topics and frameworks. Overall, there was less concern with, in Shen's terms,

»conformity« than »interference« between literature and cognitive processes. Several papers took foregrounding/defamiliarization as a paradigm of literariness (definitive of literary language and/or effects), but its nuances were rarely discussed – for example, deviation is relative to any established pattern, and a matter of degree. Cognitive conformity could suit other candidates for literary effect, such as an aesthetics of »suggestion structure«, that is, the array of emotional associations and memories evoked by a text.[14] It also fits Lakoff and Turner's account of the power of poetic metaphor in terms of its evocation of and resonance with knowledge, its revelation of new coherences. These may not conflict, but participate in a range of pleasures: the unfamiliar; the familiar; and as Giora says, the familiar in the unfamiliar. Certain characteristic biases of cognitive poetics persisted. If cognitivism renews formalism, structuralism and stylistics (no bad thing, given the inattention to such matters recently, as Kelleter says), it could pay more attention to the fantastic and conventional dimensions of literature, and to contextual factors in the shaping of texts and responses.[15] If I seem to be harping on such factors, it is because recent discussions of form/content, text/context, general/particular, and nature/culture have been very one-sided (the former side in cognitive poetics, the latter side in mainstream studies), and I think cognitive perspectives have much to contribute to a better understanding, while developing their approach at the same time.[16] Both Cognitive and Cultural Studies combine anthropological and humanist views of culture. And the cognitive interest in extra-academic reading, and in empirical methods, for example, might connect with Cultural Studies' focus on the sociology of popular art and culture.[17]

The great value of empirical cognitive approaches is in their integration of theories, topics, and methods from various subfields of psychology and literary studies to produce analyses (and empirical findings), that can be unexpectedly useful for the theoretical frameworks on which they draw, but also for literary criticism and interpretation. Any new analysis of a literary concept can reconfigure the field, shift attention in certain ways, and thus suggest new avenues of interpretation; but cognitivism also offers symbiosis with the sciences.

For example, Miall writes, »While empirical study depends on theory, in practice it can illuminate methods and outcomes of reading that we may know little about, and that can relocate our understanding of reading to include the common reader (a much neglected figure in the recent history of our discipline). […] [I]t can help us assess the validity of theoretical claims«.[18] His work takes ideas about emotion and self implication in literature from Coleridge and other Romantics; and the idea of literariness as deviation and foregrounding from Russian and Czech formalism. These ideas are elaborated in the light of frameworks for emotion, and methods for hypothesis testing, from recent cognitive and neuropsychology (e.g. Damasio, Le Doux, Gerrig). There is much complex coordination here. This research anchors and limits literary hypotheses, confirming some, disputing others (such as the structuralist idea that »literary competence« depends only on grasping conventions [377]), and helping suggest new ones.

Miall argues that feeling is central in literary response, and probably characteristic of literariness (cf. 378). In the light of newer theories of emotion, studies asking subjects to »think aloud« about passages they find striking offer evidence that readers unconsciously find »affordances« in texts to trigger existing feelings. One reader of Coleridge's *The Nightingale* reports thoughts of England, and ideas of being alone, isolated, and alienated. Miall suggests that the poem »reminds her of, and promotes to consciousness, a feeling that has already been actively shaping her understanding of herself« (381), and this may be a benefit of literary reading. Such evidence also leads to proposals about how the anticipatory aspect of emotion relates to its »appraisal« aspect, and to personal identity: an emotion anticipates not just action, but also the self one will become in following the emotion, which allows reflection and judgment on such changes (cf. 384). This offers a better approach to emotions in fiction and in culture. While the content and expression of emotion are culture-dependent (and literature may both mould and challenge emotional assumptions), its processes are not (cf. 385). EEG and reading time studies show that much initial processing, including foregrounding and feeling memory, begins preconsciously, so even these very fast responses may be rich and complex, preparing for the conscious experience of »defamiliarization« (386).

These configurations of ideas about language, emotion and the brain, and their relations to action, consciousness, and identity, offer new ways to look at texts, interpretation, and context. We have specific insights and analytical tools concerning how formal text structure sparks preconscious personal/cultural emotional response, which in turn guides conscious responses. In specific texts, one could further examine text/emotion/identity interdependencies, such as how overall foregrounding structure relates to emotion structure, and how this in turn relates to »self fashioning« in readers and writers by anticipations and evaluations of possible selves. One could compare such responses across various audiences and cultures.

New questions also arise. I think this welcome attention to the large neglected topic of the real experience of ordinary readers should be pursued as an expansion, not a shift away from interpretation. »Shift« suggests a too sharp opposition between these processes, and between ordinary and expert readers (and perhaps popular and high culture). Though most reading is not »study« in an academic sense, many readers value learning more about interpreting and appreciating meanings and effects, and make contact with expert reading via schools, the media, etc., and go on to use what they learn. Psychology is very interested in the nature of expertise, and there is an opportunity here to study how literary expertise is developed, and how it relates to ordinary experience. Yes, some experts seem only to crank minutiae through arcane decoding apparatuses; but others help us see what is really there. The interpretive quality of the experience of rereading, and the fact that some less popular texts are far more valued and artistically important than bestsellers indicates a valued dimension of interpretive depth or complexity in literature. I doubt there are any sharp lines to be drawn here, but at the extremes one finds contrasting kinds of author intention, book (i.e. »desert island« vs. »beach«), and readerly experience. Stockwell's proposal to collapse hermeneutics and poetics, i.e. what vs. how a text means, interpretation vs. texture, implies a promising balance between valuing ordinary and trained experience.[19]

This in turn bears on large issues of the nature and purposes of literature and literary education. It suggests a new angle on the so called »affective fallacy« (confusing the poem and its results, what it is and what it does), parallel to recent challenges to the ideal of dispassionate reason (Damasio): emotion, not just linguistic analysis, is an essential guide to text structure and meaning. Moreover, the ideas of foregrounding and defamiliarization fit a broader view that literature challenges »stock response« or »automatization«, and criticism should question clichés and ideology. We might say that practicing literary reading and reflection expands and refines our emotional imaginations; but we should also consider negative aspects of literature's power to manipulate emotions and selves.

The conference's empirical studies also prompt reflection on the nature and role of science in the humanities. I hope that, since the limitations in my knowledge here are very common in literary studies, the following remarks will be useful as articulating a view that is sympathetic to but not expert in empirical literary scholarship. Miall argues that cognitive poetics as practiced tends to become interpretive and theoretical, despite its claim to focus on everyday reading.[20] The empirical studies were intriguing even in their preliminary results and planning stages, and offered the rare prospect of cumulative results, as well as connecting with larger issues. But I think some caution about the appeal of science is in order. Progress is also made through case studies – as in cognitive linguistics, also of »uncertain empirical status« (Richardson [note 2], 7).[21] And I share Kelleter's feeling that some empirical results *seem* »trivial« (Kelleter [note 4], 29, 46), though I agree that as science tends to move in small steps, whether these are »interesting« is a matter of opinion (Eibl [note 6], 424 f.).[22] A bigger problem, to which a devil's advocate could point, is the explanatory immodesty of actual scientists (not just pseudo scientists); and the questions this raises about what scientific method as such can and cannot do. For example, Pinker attacks, fairly enough, Lakoff's analysis of moral/political thought and program for reform as a »tendentious Theory of Everything«; but then Pinker's motive is surely to drive his own omnibus theory of human nature in front of it (e.g. Pinker, *The Blank Slate* [note 23]). In consciousness studies, some don't see why Chalmers' philosophical »hard problem« (that physicalist explanations of cognitive processes cannot add up to an account of consciousness per se, because it is logically possible for neural and cognitive activity to exist without consciousness) is a problem, or assume that science will fish up the solution any time now. Stuart Hameroff caricatured this attitude as »Let's declare victory and get out of here« (cf. Whitehead [note 23], 86). This is related to what Dennett calls »greedy reductionism«, embodied in some evolutionary psychology (see Hogan [note 23], ch. 8) and some »Darwinian criticism« (see Richardson [note 2], 12-14). So Herbert Simon's frankly imperialist proposal to absorb literary studies into cognitive science is neither surprising nor acceptable.[23]

The general problem may be that, due to the inter-definition of theory and observation, it is not obvious that scientific results are stable in meaning, or that they confirm or disconfirm theories in any straightforward way. Even a wrongheaded approach may generate experimental results, giving a veneer of success (e.g. behaviourism). And results are often pressed into the service of (possibly conflicting) theoretical speculations. These may be just the daily risks of any scientific endeavour, but they show that empirical expertise does not confer an ability to generate satisfying explanations, or even to adjudicate the claims of competing frameworks, at least in the short term. Given that labour must be divided anyway, and given the difficulty of acquiring proper scientific training, the feeling that limited time and energy are better invested in traditional methods of one's own field (or more closely related ones) is understandable.

Reviewing and reflecting on these methodological relations, Richardson concludes that empirical researchers should be wary that study constraints may screen out complexities and nuances; while speculative critics should avoid empirical claims, or learn how to test them. We should not minimize the value of trained introspection, informed intuition, or disciplinary expertise (cf. Richardson [note 2], 25). Philosophy of science could both introduce and contextualize issues of empirical explanation. Paisley Livingston's *Literary Knowledge* skewers »framework relativist« views of science, and also sets out an original program for »oriented readings« to »challenge and to refine, to complexify and perfect hypotheses within the other anthropological disciplines« (Livingston [note 24], 260). This sounds not unlike Bordwell's memorable early proposal to link interpretation with science without simply being either – that is, »not disguising culture as nature, but nibbling at the edges of philosophical doctrine with teeth sharpened by empirical inquiry« (Bordwell [note 24], 16). More recently, Slingerland's framework for a cognitive approach to culture uses philosophy of science to argue for »vertical integration« of disciplines, in which lower level findings limit hypotheses of higher levels, which guide and contextualize lower levels.[24]

All of this is only to point out *potential* problems visible from the border of scientific and humanistic inquiry, not to discourage their cooperation. Further engagement with science can only help to clarify and meet such challenges. The long term success of science is clear; and empirically informed interdisciplinary theorizing is better than insulated theorizing with no extramural inspiration or correction. Empirical methods and procedures seem a distant disciplinary goal, yet their importance in cognitive science challenges cognitive poeticians to learn more about them, the better to converse with the broader field (and move research in the direction of testability).

Like cognition, cognitivism is a complex and dynamic affair, with many interweaving strands, some overlapping, some in tension, and touching other approaches at various points. It is neither another millennial hope nor another superficial positivism; as it matures it may become an indispensable part of future literary study. The conference drew out and joined together some of those strands, and by revealing some of its present strengths and gaps, showed its considerable, continuing and expanding promise.

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Notes

[1] JLT has published important recent work in this area, and readers may be familiar with the standard texts and frameworks. Richardson's and Rice's websites provide quite good introductions to and bibliographies for the turn: Alan Richardson (ed.), *Literature, Cognition & the Brain*. < http://www2.bc.edu/~richarad/lcb/>; Clai Rice (ed.), *Cognitive Approaches to Literature*. <http://www.ucs.louisiana.edu/~cxr1086/coglit/index.html>

[2] Meir Sternberg, Universals of Narrative and Their Cognitivist Fortunes (I), *Poetics Today 24:2* (2003), 297-395, here 321, note 16; Bo Petterson, Afterword: Cognitive Literary Studies: Where to Go from Here, in: Harri Veivo/Bo Petterson/Merja Polvinen (eds.), *Cognition and Literary Interpretation in Practice*, Helsinki 2005, 307-322, here 310-316. Keith Oatley urges further study of emotion in narrative: Keith Oatley, Writingandreading: the future of cognitive poetics, in: Joanna Gavins/Gerard Steen (eds.), *Cognitive Poetics in Practice*, London 2003, 161-173, here 167-170. Alan Richardson regrets cognitive narratology's lack of interest in »the mind's embodiment«: Alan Richardson, Studies in Literature and Cognition: A Field Map, in: Alan Richardson/Ellen Spolsky (eds.), *The Work of Fiction: Cognition, Culture, and Complexity*, Aldershot et al. 2004, 1-29, here 16.

[3] In what follows, some of the quoted phrases are from abstracts distributed to participants, and some from the papers as presented at the conference. I thank the participants for clarifying their work for me in follow up discussions.

[4] Frank Kelleter, A Tale of Two Natures: Worried Reflections on the Study of Literature and Culture in an Age of Neuroscience and Neo-Darwinism, *JLT* 1:1 (2007), 151-187, here 11.

[5] Hogan has addressed some differences between real life and literary emotions via classical Indian literary theory, and Oatley has followed his lead (Oatley [note 2], 167 f.). I am not convinced that their approach accounts for the questions I raise here. Gregory Currie discusses the potential conflict between realist/simulational and conventionalist/schematic approaches to fiction in *Arts and Minds*, Oxford 2004, 165-170.

[6] Kelleter (note 4); Karl Eibl, On the Redskins of Scientism and the Aesthetes in the Circled Wagons, *JLT* 1:2 (2007), 421-441; David Miall, Beyond Interpretation: The Cognitive Significance of Reading, in: Harri Veivo/Bo Petterson/Merja Polvinen (eds.), *Cognition and Literary Interpretation in Practice*, Helsinki 2005, 129-156; Peter Stockwell, Cognitive Poetics and Literary Theory, *JLT* 1:1 (2007), 135-152. Kelleter argues that interpretive and historical scholarship are distinctive of the humanities, and are »categorically distinct, not at variance or incompatible" with scientific methods (Kelleter [note 4], 79). Eibl agrees that these represent »two different kinds of knowledge« (438). He goes on to specify that they represent »two *perspectives* on the same thing, an internal and external perspective« (ibid.), and that each perspective, experiential reflection and empirical science, may inform the other. He points out that interpretation uses scientific methods, at least in the sense

of formulating and testing interpretive hypotheses (423). Miall argues for shifting the focus of literary scholarship from interpretation to literary experience. Stockwell responds to Miall, among others, pointing to the interaction of literary experience and feeling with meaning and interpretation interact. I discuss these issues further below.

[7] For more on this and other research by Kimmel, see his website: <www.michaelkimmel.at>.

[8] For overlapping structure, see George Lakoff and Mark Johnson, *Metaphors We Live By* [1980], Chicago 2003, 100. For the metaphor system for Morality, see their *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*, New York 1999, ch. 14.

[9] For the »source domain only error« see George Lakoff and Mark Turner, *More Than Cool Reason: A Field Guide to Poetic Metaphor*, Chicago 1989, 128.

[10] Richardson (note 2), 15.

[11] Mark Turner, The Literary Mind: The Origins of Thought and Language, New York 1996; Rick Grush/Nili Mandelblit, Blending in language, conceptual structure, and the cerebral cortex, *The Roman Jakobson Centennial Symposium: International Journal of Linguistics Acta Linguistica Hafniensia* 29 (1998), 221-237, <http://mind.ucsd.edu/>.

[12] V. S. Ramachandran and E.M. Hubbard, Synaesthesia – A Window Into Perception, Thought and Language, *Journal of Consciousness Studies* 8:12 (2001), 3-34, here 19; Raymond W. Gibbs, Jr./Herbert Colston, The Cognitive Psychological Reality of Image Schemas and their Transformations, *Cognitive Linguistics* 6 (1995), 347-378, here 363.

[13] Ellen Spolsky, Gaps in Nature: Literary Interpretation and the Modular Mind, Albany 1993.

[14] Oatley (note 2), 169 f.; Patrick Colm Hogan, *The Mind and Its Stories: Narrative Universals and Human Emotion*, Cambridge 2003, ch. 2.

[15] Kelleter (note 4), 10 f.

[16] Constructions or models or ideologies of race, class, gender, etc. are already topics in cognitive linguistics; but not much in cognitive poetics. »Ideology« is considered the central concept in cultural studies. However, Kelleter’s remarks that cognitive principles are »banal from the perspective of cultural studies, and a self-evident departure for further inquiry« (Kelleter [note 4], 29), and that literary research »must always respect and rely on basic empirical findings« (46) are much overstated. Many icons of cultural studies would insist rather on the discursive and ideological construction of all consciousness, including that of our bodies and the material world (e.g. Foucault, Barthes, Althusser, Butler, ... and it continues), and are highly suspicious of any »universalizing discourses«. Empirical findings get ignored here.

[17] Kelleter suggests a link with Franco Moretti’s »distant reading« empirical studies of novel publishing/reading patterns (Kelleter [note 4], 166, note 5). One might also mention Janice Radway’s study of romance novel readers, *Reading the Romance*, Chapel Hill 1984. It is sociological, psychoanalytic, and feminist; yet insofar as it examines real reader accounts of emotional experience and »escape«, it is congruent with the interest in real readers, emotion, and »transport«.

[18] David Miall, Feeling from the Perspective of the Empirical Study of Literature, *JLT* 1:2 (2007), 377-393, here 377.

[19] In On Cognitive Poetics and Stylistics, in: Harri Veivo/Bo Petterson/Merja Polvinen (eds.), *Cognition and Literary Interpretation in Practice*, Helsinki 2005, 267-282, Peter Stockwell sets out twelve levels of processing involved in »reading« – all together amount to »interpretation«, »the holistic experience of meaning and texture« (280 f.). If Stockwell’s analysis is intended to make explicit what is implicit in his reading experience, the odd inference seems to be that all possible meaning in a text is somehow implicit in any particular reading. This might bring us back to reconsider the text itself as an artifact that at once supports, constrains, and exceeds the cognitive processes of any particular reading.

[20] Miall (note 6).

[21] More fully, cognitive linguistics presents an accumulation of examples; but critics prefer the »controlled, randomized, and double-blind experiments that constitute the gold standard for empirical studies with human subjects«. Still, neurobiological plausibility is valuable, and the »postulates of [Lakoff, Johnson, and Turner] have gained the serious attention of leading neuroscientists« (Richardson [note 2], 7).

[22] Eibl (note 6).

[23] Steven Pinker, *The Blank Slate: The Modern Denial of Human Nature*, New York 2002, and Metaphorical Limits: George Lakoff's Tendentious Theory of Everything, in: The New Republic Online, 3 Nov. 2006, <http://www.tnr.com/>; David Chalmers, *The Conscious Mind: In Search of a Fundamental Theory*, New York 1996; Charles Whitehead, Everything I Believe Might Be a Delusion. Whoa!: Tucson 2004: Ten years on, and are we any nearer to a Science of Consciousness?, *Journal of Consciousness Studies* 11:12 (2004), 68-88; Patrick Colm Hogan, *Cognitive Science, Literature, and the Arts: A Guide for Humanists*, New York 2003; Herbert Simon, Literary Criticism: A Cognitive Approach, *Stanford Humanities Review* 4:1 (1994), 1-26, <http://www.stanford.edu/group/SHR/4-1/text/toc.html>.

[24] David Bordwell, A Case for Cognitivism, *Iris* 9 (1989), 11-40; Paisley Livingston, *Literary Knowledge: Humanistic Inquiry and the Philosophy of Science*, Ithaca 1988; Edward Slingerland, *What Science Offers the Humanities: Integrating Body and Culture*, Cambridge 2008.

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