5.   "Storification"

Or, What Do We Want Psychology and Physiology to Tell Us about Screen Stories?

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> Every place has a story, and every story has a place.
> – Krissy Clark (2010)

I recently took a party of visiting grandchildren to a city centre toy store as a treat. As we waited in line for opening time, there was rising excitement. Then the thrill of rushing in, and finding a section devoted to *Ninjago* sets and their many spin-offs. An hour later, after weighing up options and combinations, we left with a haul of *Ninjago* material. No question that in the current world of four-to-seven year olds, Lego's *Ninjago* rules; although of course by the time you read this, there may be another emerging play/product world to challenge its dominance.

The previous paragraph not only describes an actual observation of the "power of story," it also follows a widely recommended rule that to secure attention, I should "tell a story," and ideally one based on personal experience. I could have started by observing that Lego's *Ninjago* is one of the most successful current entertainment franchises, selling model sets, costumes, games, books, television, and film consumption. In short, a "story-world" that is also a "product-world"; and moreover an excellent example of a "transmedial" world, in which almost every medium accessible to a young person is mobilized around a central theme, which is reduced to a single iconic name: *Ninjago*.

But in presenting my opening exhibit as I did, I am in fact following the advice of neuroeconomist Paul Zak, who advises business people to "begin every presentation with a compelling human-scale story" (2014). Straddling the worlds of academic research and marketing, Zak recounts his core "discovery":

> A decade ago, my lab discovered that a neurochemical called oxytocin is a key "it's safe to approach others" signal in the brain. Oxytocin is produced when we are trusted or shown a kindness, and it motivates cooperation with others. It does this by enhancing the sense of empathy, our ability to experience others' emotions. Empathy is important for social creatures because it allows us to understand how others are likely to react to a situation, including those with whom we work. (2014)

There is in fact a large and diverse scientific literature on oxytocin and the often exaggerated or simplified claims that have been made for its "effects." But Zak recounts a highly functional experiment:

> we tested if narratives shot on video, rather than face-to-face interactions, would cause the brain to make oxytocin. By taking blood draws before and after the narrative, we found that character-driven stories do consistently cause oxytocin synthesis. Further, the amount of oxytocin released by the brain predicted how much people were willing to help others; for example, donating money to a charity associated with the narrative. (2014)

Using more sophisticated experimental techniques, which involved monitoring the oxytocin levels of a group of viewers watching a Bond film, Zak concludes:

> If the story is able to [create and sustain] tension then it is likely that attentive viewers/listeners will come to share the emotions of the characters in it, and after it ends, likely to continue mimicking the feelings and behaviors of those characters. This explains the feeling of dominance you have after James Bond saves the world, and your motivation to work out after watching the Spartans fight in *300*. (2014)

While such "findings on the neurobiology of storytelling" are offered for use in "business settings," I invoke them here to characterize the tenor of recent research on spectatorship or viewer response.

Zak's work referenced stereotypical fiction films to dramatize the lasting emotional impact of film, no doubt on the basis of showing his subjects short segments of the films mentioned. A more focused experiment is reported in another paper from his lab, making use of a specially created short film:

> Participants viewed a brief story of a father's experience with his 2-year-old son who has terminal cancer. After the story, participants were presented with an opportunity to donate some of their study earnings to a related charity. Measures derived from cardiac and electrodermal activity [...] significantly predicted donor status. [...] Moreover, cardiac activity and experienced concern were found to covary from moment-to-moment across the narrative. Our findings indicate that the physiological response to a stimulus, herein a narrative, can predict influence as indexed by stimulus-related behavior. (Barraza et al. 2015)

Fig. 5.1: Zak's story of Ben; behavioral outcomes from viewing a narrative created to test bioemotional response.

More typical of such research is this measurable behavioral outcome. A company that has specialized in developing tools for measuring bioemotional response from physiological data, Filmtrip, now offers its Sensum platform for use by advertising, "customer retail, ethnographic studies and augmented focus groups."[1]

We live in a world where stories and storytelling have been placed at the center of vast areas of human activity – seemingly as the result of a wide-spread cultural realization of "story" as a primordial form of engagement, but often in the banal language of PR and commercialism. "Storification" is a term widely used in education, as well as in new forms of journalism.[2] But it is also the name of a Finnish company selling marketing techniques:

> A story gives your service a red thread – a plot – that makes your service a memorable experience. A story-designed service is easy and fun to sell. A story-designed service is better; daring and different. It is an experience that your customers understand and love. Tarinakone helps businesses to create meaningful and touching customer experiences.[3]

While "stories" dominate our culture, the tools and methods for understanding them have also proliferated exponentially since the end of the last century. The period during which film studies was taking shape, roughly

the 1970s and 1980s, followed the emergence of a structuralist paradigm in humanities – and indeed found considerable inspiration in this. Drawing on the insights of mainly Russian scholars of the interwar years (Viktor Shklovsky, Vladimir Propp, Boris Eikhenbaum), together with the architects of semiotics (Umberto Eco, Roland Barthes, Gérard Genette, Tzvetan Todorov), structuralism offered ways of analyzing the narrative structure of a wide range of individual films, showing how these conformed to standard patterns, as revealed in folklore by Propp or in nineteenth-century fiction by Barthes.[4]

However, this field can hardly be said to have developed, or even continued; so that the early classic studies of Christian Metz, François Jost, Raymond Bellour, and Peter Wollen increasingly look like lonely monuments to a once-imagined semiotic "science" of cinema. The question once was: What can we learn from the knowledge that films conform to narrative patterns discernible in other media? But now it is: What do we want to understand "behind" or "beneath" the obvious facts of film and television's prolific storytelling. The spatial figures are perhaps significant, and could indeed be supplemented with "around" screen storytelling and "story-following." Rather than study screen narrative *texts* in isolation, seeking to understand their mechanics – and to discover their readers/viewers "in" the text as was once fashionable (Browne 1975-1976, 26-38; Crofts and Rose 1977, 9-60; Barker 2012, 187-205) – we are increasingly interested in their *contexts* – of production, reception, intermediality, intertextuality.

Yet, at the same time, although in very different fields of research, there has been immense progress during recent decades in understanding *how* we as individuals, and as a species, "process" stories. This progress might be categorized as either psychological or physiological, or more broadly as "cognitive"; so that if there is a dominant paradigm of the twenty-first century, an equivalent to structuralism, it is almost certainly "cognitivism." And an important subdomain within this is "cognitive narratology," which is defined by one of its leading exponents, David Herman, as: "the study of mind-relevant aspects of storytelling practices, wherever—and by whatever means—those practices occur." Herman casts the net wide in his definition:

> cognitive narratology is transmedial in scope; it encompasses the nexus of narrative and mind not just in print texts but also in face-to-face interaction, cinema, radio news broadcasts, computer-mediated virtual environments, and other storytelling media. In turn, "mind-relevance" can be studied vis-à-vis the multiple factors associated with the design and interpretation of narratives, including the story-producing activities

of tellers, the processes by means of which interpreters make sense of the narrative worlds (or "storyworlds") evoked by narrative representations or artifacts, and the cognitive states and dispositions of characters in those storyworlds. In addition, the mind-narrative nexus can be studied along two other dimensions, insofar as stories function as both (a) a target of interpretation and (b) a means for making sense of experience—a resource for structuring and comprehending the world—in their own right. (2013)

For Herman and others who would accept the rubric of "cognitive narratology" to describe their work (and he notes a persistent level of resistance to "cognitivism," leading some to deny it as a label), this is clearly a continuation of "narratology" by an expanded range of means. But it is by no means the only emergent new mode of inquiry focused on the reception of storytelling.

For example, Liesbeth Korthals Altes proposes the concept of "ethos" as crucial to how readers form "an image of a storyteller's psychology, world view, and emotional or ethical stance," which then affects how they interpret or evaluate narrative texts (2014, n.p.). Attributing an ethos to characters, narrators, or authors, she argues, will significantly affect our interpretations. Then there is the extensive work of a number of mainly Dutch scholars on "absorption," described as "a spontaneous temporary change in the state of consciousness due to an exceptionally intense awareness of a fictional narrative," which may be investigated empirically through interview studies (Hakemulder et al, 2017, n.p.). Comparing these approaches, we might conclude that Korthals Altes is working within a "metahermeneutic" or more simply a rhetorical framework, while C and his colleagues are extending and refining an essentially experimental approach that seeks to define and *measure* forms of absorption.

Neither of these approaches is solely, or even specifically focused on film, or more generally on "screen media." Indeed, their frequent use of the term "reader" suggests a kinship with the broader literary tradition of "reader-response" inquiry. However, another emerging discipline that directly addresses the abundance of contemporary media is "attention economics," focusing on the consequences of competition for our attention by contemporary digital media. These may be considered negative, as Matthew Crawford argues: "Attention is a resource—a person has only so much of it" (2015, 11). Or, less commonly, they may be seen as positive. Clay Shirky makes use of the concept of "cognitive surplus" in the digital era in his study subtitled "How Technology Makes Consumers into Collaboration," arguing that the connectivity of social media makes possible new forms of social and cultural collaboration (2010). Whichever view is taken, there can be little

doubt that the pervasiveness of "always on" digital media has had a profound effect on the consumption of screen-based media, creating new habits and new pressures, which are often described in terms of "overload" or surplus.

There is, of course, an obvious danger in basing the study of stories on our present condition – however that is characterized. "In order for us to do what we do, our minds must have been prepared from before birth to learn the information specifically relevant to human problems" (Boyd 2009, 39) – or prepared over many generations/ before the arrival of smartphones, indeed of television and cinema? There is perhaps a certain symmetry between the traditional "origins of cinema" narrative and the efforts of modern evolutionary psychology to understand why and how humans have the storytelling and following capacity. In his pioneering, *A Million and One Nights*, which offered "a history of the Motion Picture through 1925" that reached back to its earliest antecedents, Terry Ramsaye claimed that:

> The motion picture is as irresistible as the life stream behind it. [...] [It] may be called the last-born off-spring of the parent impulse of all the arts of expression, which are seeking to transmit to and infect others and ourselves with an impression of things and emotions. (1986, xxxviii)

For Ramsaye, seeking to provide newly arrived motion pictures with a respectable ancestry, the "age-old Wish of the world" that would lead eventually to movies had its antediluvian origins in "the dawning ability to re-enjoy by re-creation of the event of pleasurable memory" (xxxix), as had all previous forms of graphic and dramatic expression. Ramsaye had no need to invoke Darwin – probably wisely, writing in the same year as the Scopes Trial saw an American teacher prosecuted for teaching evolution in defiance of Tennessee's Fundamentalist prohibition – but recent decades have seen a number of attempts to ground storytelling in an evolutionary or biocultural account of human nature.

In his wide-ranging study *On the Origin of Stories*, Brian Boyd argued, that an adequate understanding of the storytelling capacity exhibited uniquely by humans must "take evolution seriously" (Boyd 2009, 38-39). Many animals display an ability for what we can call "play," but for Boyd, stories represent a uniquely *representational* form of play which has evolved in the human species. Moreover, as he observes, "to explain fiction fully we cannot merely explain narrative," since understanding event sequences is something we share with other animals (129). The ability to understand representations *as* representations has been found to develop naturally in all children between their second and fifth years. And since such a species-wide ability, together

with our clear preference for fictional representation rather than "true" narration, does not seem to serve any biological need, its origins must lie elsewhere:

> Fiction, like art in general, can be explained in terms of cognitive play with pattern – in this case with patterns of social information – and in terms of the unique importance of human attention. (130)

A significant implication of this biocultural turn, for Boyd and others, is to deprivilege structural, ideological, or narratological approaches, in favor of exploring "deep species-wide competences."

Although Boyd has little to say about film or screen media (despite crediting David Bordwell as a major influence on his thinking), Torben Grodal produced an ambitious overview of the potential for applying neuroscientific and ethological findings to understanding how films are made and experienced in his *Embodied Visions* (2009). Conscious that this approach has been seen as reductive, Grodal offered a defense in his contribution to an earlier book in the present series:

> Bio-culturalism is not an effort to banish history and culture from film studies. On the contrary, a bio-cultural analysis of film provides a double historicity: the long evolutionary history that has shaped our embodied brains and a much shorter recent history in which the interaction of embodied mind, film industry, film makers and audiences mold what specific film forms and film contents exist at a given moment in time. (2012, 142)

As it happens, a good example of using observed biological evidence from the recent history of film is provided by David Bordwell in an article offered in tribute to Grodal (Bordwell 2003). Drawing on empirical studies of how often people in real-life conversational situations look at each other, and comparing this with the much higher incidence of such eye-contact in such films as L.A. CONFIDENTIAL (1997) and CHINATOWN (1974), Bordwell is able to hypothesize that the direction and exchange of looks on-screen plays an important part in how we read narrative, and so has to be conventionally exaggerated, even within apparently naturalistic styles.

Bordwell links his observations on exchanged looks and blinking in film with Ed Tan's more general argument that "the ground of our emotional engagement in films is the attitude of interest" (Tan 1996, 85). A related approach to using biophysical data on how spectators related to film viewing is provided by the work of the psychologist Tim Smith, much of it using eye-tracking techniques to identify where viewers' attention is directed

Fig. 5.2: In L.A. CONFIDENTIAL, Bordwell observes that characters "look far more often and fixedly at listeners" than they would in real life, to avoid sending the wrong signals within the conventions of screen narrative.

(Smith and Christie 2012; Smith 2016). Smith's general conclusion, in a report on "psychocinematics," stresses:

> how incredibly active the viewer is both in terms of how they shift their gaze around the screen and cognitively process the presented information. The construction of the narrative is a collaborative process that requires suitable presentation of the relevant audiovisual information by the filmmaker and active acquisition and encoding of that information by the viewer. (2013, chap. 9)

Significantly, the essay to which this formed the conclusion has as its epigraph a quotation from Eisenstein's 1940 "Form and Content" essay, asserting that "the art of plastic composition consists in leading the spectator's attention through the exact path and with the exact sequence prescribed by the author of the composition" (1968, 148). Once again, it is useful to be reminded that contemporary research has its roots in the pioneer period of film theory, with Eisenstein's contribution to early biophysical and biocultural research now increasingly recognized (Vassilieva 2013).

Fig. 5.3: Iᴠᴀɴ ᴛʜᴇ Tᴇʀʀɪʙʟᴇ. Eisenstein as a pioneer in both creating and studying control of spectators' attention.

If "cognitivism" became an important new paradigm for film studies early in the present century, it has none the less remained controversial and contested, while many earlier modes of analysis and methodologies have continued to be practiced. Yet within what has become a pluralistic field, now addressing a wide range of screen media, formats and "viewing positions," it seems more important than ever to insist on the need to define precisely *what* questions we are seeking to answer, and to consider the most appropriate methodology. The fact that film studies, and to some extent media studies, were long held apart from the social and biological sciences that could contribute to addressing many of their questions was surely not beneficial.

In a valuable reflection on his own methodological trajectory, Bordwell looked back at his influential 1985 book *Narration in the Fiction Film* in a 2011 post. He noted that the book "explicitly left aside the emotional dimensions of narration," partly because that was typical of cognitive science of the period, but also because early film studies also tended to disregard affective issues – possibly as a way of distancing its work from popular "film appreciation." Bordwell goes on to reflect on how, subsequently, "the relation of emotion to cognition has become central to cognitive science," and how:

cognitive film studies has moved in parallel with cognitive science gener-
ally. We have had neurological studies of film viewing; we have seen
appeals to evolutionary psychology; we have seen studies of suprapersonal
patterns of emergence. (2011)

This account seems to me exemplary in identifying nonpolemically how the
field of film studies has changed, and how one scholar, concerned primarily
with "functional and causal-historical" explanation, has also shifted, taking
advantage of not only important new scientific insights but also of the
ever-widening range of material that film and media historians have before
them. Bordwell's 2011 post ends by restating the goal expressed in his and
Noël Carroll's 1996 *Post-Theory*: "theorizing as an *activity* that asks research-
able questions and comes up with more or less plausible answers—some
commonsensical, some not, and some probing what counts as common
sense" (Bordwell, 2011).

   Two decades after that book's polemical stance, and with stories and
storytelling currently occupying so much of our cultural landscape, the need
to clarify what questions we want to ask seems obvious, as well as the attrac-
tion of probing "what counts as common sense" within the "storification"
bubble. So too does the value of making use of different models and methods,
as appropriate, rather than adopting any single "theory of narrative." Finally,
we are perhaps ready to build upon the contribution of earlier generations of
scholars, working within the frameworks of their era, but often addressing
questions that are still with us, albeit in seemingly novel forms.

Notes

1. See https://sensum.co/. Also the discussion of what can be learned from in-
    teractive experiments in the dialogue between Tim J. Smith and Ian Christie
    (2012, 183-184).
2. See Sylvester (2006), http://post.queensu.ca/~sylvestr/articles/Storification.
    pdf; Akkerman, Admiraal, and Huizenga (2009), https://dl.acm.org/citation.
    cfm?id=1480564; Clark (2010), http://niemanreports.org/articles/journalism-
    on-the-map-a-case-for-location-aware-storytelling/.
3. "Story-designed services" by Tarinakone, http://www.tarinakone.fi/en/.
4. Vladimir Propp, *Morphology of the Folk Tale*, written in 1928, was first
    translated into English in 1958, and became a key inspiration for much early
    structuralist analysis. Roland Barthes, *S/Z* (1970, trans. 1974) offered a semi-
    otic analysis of Balzac's 1830 novella *Sarrasine*.

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