The narrative hinge between the neurology and the psychology of neurotraumatic responses

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Abstract

In recent years, Goldstein's neuropsychological approach to brain trauma has enjoyed a renaissance. One rehabilitation topic grounded in his work is how people come to terms with traumatic reactions following brain injuries. The new interest in Goldstein's ideas stems from a growing appreciation of his clinical vision, one that holistically integrates the neurological and psychological sides of neurotraumatic responses. In this paper, we suggest that narrative is a hinge binding these two sides. The narrativization of the experience of cerebral damage is particularly difficult due to the breakdown of many narrative functions themselves, which can result in traumatic reactions like those Goldstein called catastrophic. We discuss neurotrauma narratives in terms of five specific (dys)functions: coherence, distancing, evaluation, communication, and exploration. Interventions that bolster narrative functioning and support the restorying of traumatic experiences are increasingly recognized for use in brain rehabilitation and treatment programs.

Keywords: catastrophic reaction, Kurt Goldstein, narrative, trauma

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Einleitung

Around the turn of the last century, Oliver Sacks observed that Kurt Goldstein (1878–1965) was one of the most forgotten figures in neurology. In fact, he mentioned that if someone came across Goldstein's work, it would likely be unintentionally – at least in the English-speaking world. To read Goldstein's works was an »intellectual surprise«. Here was a scholar who offered a neuropsychological vision, in the full meaning of the word, challenging the duality between neurological and psychological, something that is reflected in the titles of his works, such as *The effect of brain damage on the personality* [10].

In the time since Sacks made his observations, research in neurology, psychology, neuroscience, and the health sciences is finally catching up to the concepts Goldstein suggested so many decades ago. The literature search we conducted prior to writing this paper indicates a rekindled appreciation of his ideas in the last years, making him and his oeuvre, on the 50th anniversary of his death, less forgotten. Let us mention three areas where Goldstein's notions are increasingly influential, the first two very briefly and the third one in a more extended way, as it is the field of research and practice with which we are most familiar.

The first area in which Goldstein's influence can be felt is on the topic of neural reuse theories. According to these neuroscience theories, a central organizational principle is that the brain (re)uses the same neural circuitry for dissimilar cognitive purposes (e.g., Anderson [2]). That is, neural circuits established for one use can be put to a different use, often without losing their original function. Note that neural reuse theories move beyond our usual conception of neural plasticity in that circuits can continue to acquire new uses after an initial or original function is established; the acquisition of new uses need not involve lesions to the original circuit structure. As pointed out by Lia [18], Goldstein's work on »excitation configuration« foreshadowed the dynamic view of functional recruitment inherent to today's neural reuse theories. One rehabilitation application of such new approaches is that, because different tasks can be used to stimulate the same brain region, a patient may recover functions in one domain by exercising functions in another – something Goldstein was well aware of.

A second area of research and practice that builds on Goldstein's ideas is embodiment. In the past few years, embodiment – the corporeal embedding of cognition, emotion and other psychological functions – has become the subject of a large number of publications in the health sciences. A concept often associated with the phenomenologist Merleau-Ponty, it can be traced back, according to Imbert [16], to Goldstein's study of brain-injured soldiers with aphasia and agnosia. In these studies, Goldstein explored how these disorders relate to certain experience(s) that individuals have of their bodies. Furthermore, Merleau-Ponty [23] can also be read as generalizing Goldstein's observations that the con-

sequence of a brain injury is not something that should just be observed but rather something that should be understood. This involves identifying the function of a behavior (the »symptoms«) in a specific setting, rather than just seeing it as a behavior without meaning in relation to the broader context. In other words, the behavior is situationally embodied. In terms of emerging neurorehabilitation practices, embodiment therapies have been used to facilitate a person's sense of self-identity, augment communicative processes in terms of expression and reception, and more generally, support engagement in diverse cognitive activities (e.g., [13, 17]).

The third area – and the primary topic of the present article – where Goldstein's work has been exceedingly influential is psychological adjustment to and after neurotrauma. For Goldstein, thoughts, emotions and behaviors of patients are not only produced by their brains (or brain lesions), but also by psychological responses to altered brains. These psychological responses are informed by the options and models of understanding a culture affords to interpret changes in a brain. The mind, in this view, has a biological *and* a psychocultural existence.

For individuals suffering from neurological alterations, many matters of life become arduous. Even simple tasks and routines might no longer be easily accomplished. When the demands of the situation are beyond a person's capabilities, »disordered behavior« may result. The acting person will experience herself behaving in an inconsistent way because her neuropsychological »performance capacity«, as Goldstein [11] put it, is »disproportionate« to the demands of her environment, all of which can be extremely anxiety provoking.

One of the important concepts Goldstein uses is abstract attitude. Abstract attitude refers to the ability to think imaginatively, to move beyond the »mindless concrete«. Without abstract attitude, a person's ability to make sense of the anxiety that accompanies a disordered state is severely reduced; without abstract attitude, it is difficult to »become conscious of [one]self«. As a consequence, there is a qualitative shift in the experience of anxiety in that the person does not have the feeling of anxiety, but is the anxiety. Ultimately, this culminates in a cascading catastrophic reaction. Catastrophic reactions, writes Goldstein, are

> *not only »inadequate« but also disordered, inconstant, inconsistent, and embedded in physical and mental shock. In these situations, the individual feels himself unfree, buffeted, and vacillating. He experiences a shock affecting not only his own person, but the surrounding world as well. ([11], p. 49)*

What a person experiences in such a moment is nothing less than the *»breaking down or dissolution of the world and a shattering of his own self« ([11], p. 232)*.

Goldstein's observations on catastrophic reactions has initiated a line of thinking exploring not only neurotraumatic responses but also more broadly, posttraumatic stress disorders and reactions (an issue we address later). Catastrophic reactions are only the most extreme form of a failure to adequately cope with challenges; there are less extreme forms of insufficient coping individuals deal with in their daily lives. Yet as a rule, Goldstein pointed out, people will do whatever they can to avoid the disequilibrium of insufficient coping, whether by shrinking their world in order to reduce the environmental demands made on them, grasping something concrete to take the place of abstract thought, or trying other strategies. And there is a lot people can do.

Many contemporary approaches to how people cope with physical traumas (as well as with most types of trauma) hang on the idea that narrativization plays a key role [14]. Take the field of narrative medicine. An important argument here is that the very act of telling a story about oneself and one's being in the world allows a person reflect about and possibly cope with the often existential experience of illness and, what is more, a shaken sense of self [7]. Narrative always carries out a reflexive, constructive, and creative act of meaning-making, as narrative psychologists have pointed out [6, 27, 5]. Many studies examining the process of narrative meaning-making after injury or in sickness have shown that there is a high degree of cognitive sophistication involved. What they imply by this is that the ability to narrate remains intact. But this ability cannot be assumed in people with brain damage or degeneration.

Goldstein's work demonstrates that individuals with brain changes can have disordered intellectual capacities such as a lack of abstract attitude which, of course, impact the linguistic and cognitive abilities required for narrative meaning-making. This is the resulting dilemma: the experience of a damaged brain is chaotic and unique, but when patients need it most, they might be bereft of the power of narrative.

Narrative Functions and Dysfunctions

In our own research, we have used Goldstein's neuropsychological interpretation of catastrophic reaction as a frame to investigate the interplay between narrative functioning and neurotrauma and, more specifically, to understand the dynamics of catastrophic reactions (e.g., [21]). In what follows we draw liberally on our work (especially [22]) for this Goldstein tribute article, discussing, in particular, how the narrativization of one's experience with a changed brain can be troubled due to the breakdown of some main functions necessary for the complex use of language, as in narrative. We call these narrative functions coherence, distancing, evaluative, communicative, and explorative functions. Although there are numerous linguistic, reflexive, and

communicative complications after brain injuries or in neurological diseases, we limit ourselves to those most closely aligned with Goldstein's phenomenology of catastrophic reactions.

The first general function of narrative we want to highlight is coherence. As we all know, talking about challenging emotional incidents and organizing them so they make sense is a struggle even under »normal« everyday conditions. This is all the more difficult in cases of trauma; sometimes there is no coherence at all, whether causal, temporal, thematic, or psychological. In acts of extreme violence this is the rule rather than the exception. Although there often is no »sense« to be discovered, there is social and cultural pressure to explain them, that is, to present them within an established genre and according to a coherent plotline. In the wake of neurocognitive difficulties brought on by brain injuries, patients almost always struggle with organizing their experiences in a way that makes sense and is meaningful. Their narratives can be likened to a raging river that sucks in everything – from memories (real and imagined) and associations (linguistically related or not) to sayings, stock phrases and fragments from scripts of everyday life. Using William James' term, we might think of a stream of consciousness out of control.

Of course this distresses patients because their troubled brains are continuously overburdened with an endless flow of disordered information and associations, which makes it even more taxing to organize a meaningful account of what is happening. There is a condition of extreme cognitive activity and at the same time the experience of total helplessness. Oddly enough, however, the pressured flow of bits and pieces that contributes to this critical state might at the same time help patients cope with their fate over the long term. Goldstein observed that one way people react when losing their grip on meaning and plot is to cling to the tangible and concrete. Now, we found that there are conditions in which storytelling, even if in a non-canonical and weird manner, can create a tangible stream of experience, an elemental but continuous form of being, a form of contact with others and oneself.

Tangibility is also an element in another function of narrative, that of distancing. One prominent quality of narrative discourse is that it slows down the fleetingness of experience. This entails shaping the perceptions, thoughts, and emotions that are constantly bombarding us into something »objective« that can then be put at a distance, considered, and possibly reflected on [4]. All of this is part of a complex form of sense making. When a person's ability to create distance from the chaotic here and now has gone askew, it is easy to understand how this dramatically reduces his or her options to cope with the sensory, cognitive, and emotive onslaught.

In Goldstein's terms, this uncontrolled immediacy precludes any kind of abstract attitude. But without abstract attitude an individual is unable to move beyond the concreteness of the here and now; that is, a patient's mental and emotional life is dominated by the sense of permanently being engulfed. From the perspective of a family member, the patient's inability to disengage from the internal flow of experience though narrative is often experienced as exasperating and distressing; it can lead to egocentrism and a lack of empathy. Under such conditions, narrative based rehabilitation interventions that enable patients to articulate their experiences – as incoherent they may be – can hinder this engulfing experience, they can help them regain a sense of agency and decrease their self-centeredness. In holistic brain rehabilitation programs (e.g., [9, 3], for instance, patients reconstruct their identities by »self-interviewing« themselves and then sharing the elicited narratives in a therapeutic group milieu.

A third narrative function is that of evaluation. Narratives are not neutral and do not just mirror events and experiences. They are told for a reason, they express opinions and are oriented by values. They position the narrator towards the listener or co-narrator, the narrated event, and the narrative event; in other words, they take a position and make a point. Stories are more than just about information, content, and plot, they are practices that frame, not necessarily consciously, events, experiences, and ideas to fit a particular evaluative posture. More than this, they offer a perspective not only on what is said, but also on what is not said. In many narratives (and narrative events), patients tell stories in which they position themselves the same way they did pre-injury. Such an evaluative stance is not confined to pre-morbid events; it also emerges in the telling of post-morbid events. These stories, however, do not necessarily reflect the present situation very well and often create more problems than they solve.

Why do patients stick to positioning themselves the same way as they did pre-morbidly? One psychological reason is that their regular evaluative stance is normalizing and reassuring, directed as it were not only to the addressee but also to teller himself. Nothing has changed! – that is the idea (and the feeling) to be conveyed. A second, neurological reason is that a modified and differentiated evaluative view requires a kind of cognitive flexibility that we already described with Goldstein as abstract attitude. As central abilities might be seriously affected by brain changes, narratives remain »stuck«. It is important to be aware, though, that such a rigid evaluative stance can also be seen as a coping mechanism. Goldstein argued that individuals with neurotrauma often reduce their world in order to simplify it, so they have a chance to engage in some ordered behavior, even if only in a simplified world.

The fourth function of narrative is communication. Many scholars and researchers would argue that this is its most important one and we agree. Basically, every

narrative event is a story connecting teller(s) to listener(s) and listener(s) to teller(s). All complications follow from the complication of this constellation. Typically, after a teller initiates a story, a listener reacts, providing agreement, comments, additional details, criticism, variations of the story or even a counter-narrative. In doing so, the listener confirms, alters, transforms, or even silences the story. In any case, storytelling is an interactional event in which tellers and listeners are from the beginning actively involved.

Many researchers have pointed out that narratives are essentially co-constructed; they are communicative events, sites of intense intersubjective exchange. Salas [26] holds that this intersubjective need is so primal that a catastrophic reaction activates default attachment mechanisms, mobilizing patients to look to significant others to regulate themselves. A major difficulty for many patients, however, is that their stories typically are not geared towards a listening audience. Often patients appear to be talking at, rather than with, the listener, without monitoring for understanding and involvement of the other.

Using Goldstein's framework, we could say that this restriction results from the absence of abstract attitude. As we saw, without some distance from the immediacy of one's inner stream of experience, it is tricky to connect to someone else. But without such dialogical communication it is next to impossible to rely on the abstract attitude of others (and thus on their understanding, empathy, and help) to give shape to one's narratives, narratives that could bring structure and coherence to one's shattered world.

The last function of narrative we address in this context is the explorative one. Narrative is a mode that allows us to investigate and, indeed, hypothesize and speculate about what might have been, what might be, and might still be. An essential quality of all narrative activity is that it opens the horizon of the possible. Narrative is humans' most advanced mode of navigating the subjunctive. Generally, in catastrophic reactions, patients are only in a limited way able to engage in imaginative attempts to consider possibilities and new avenues because everything is consumed by the uncontrolled drama of the here and now. If we could ask Goldstein, he would likely point out that exploration of alternative lives and futures would hardly be possible without abstract attitude.

Catastrophic Reactions and Responses

Having covered the five main functions of narrative in relation to neurological alterations, we revisit three core features Goldstein uses to characterize a catastrophic reaction, the notion at the heart of our reading of his work. These are inconsistent and inadequate behavior, intense anxiety, and dissolution of the self. We highlight these three features because we want to interpret them in terms of the narrative functions we have just outlined. We begin with inconsistent and inadequate behavior, herein abbreviated to Goldstein's alternative term, disordered behavior.

This type of behavior is the result of situational demands that go beyond the scope of an individual's capabilities. We have noted that neurotrauma narratives are only to a limited degree up to the task of helping patients deal with the complex and threatening situation of having a »new« brain. The dysfunction that most obviously relates to disordered behavior is the breakdown of coherence; it shows up in many broken stories, stories that are fragmented, associative, enigmatic, and often in need of what Hydén [14] calls a vicarious voice. Another contributor to disordered behavior is the mismatch between narrative reality and the reality of a person's predicament, between storyworld and lifeworld. Many patients sense this mismatch, but seem to be unable to overcome this gulf or offer a plausible explanation for it. We already mentioned the lack of cognitive and emotional distance from the here and now of everyday life and the lack of abstract attitude as important reasons for this. And if this were not enough, individuals cannot rely on other people to support them practically, cognitively, and linguistically (for example, by a providing a vicarious voice) because of the restricted communicative function.

How could all this not lead to what we take to be a second core feature of catastrophic reaction, anxiety? Anxiety does not exist in an affective vacuum but is embedded in a flood of negative emotions. Many patients waver among anger, sadness, fear, and feeling permanently disoriented and overwhelmed. Without the support and guidance of others, this emotional overflow has a ravaging impact on form and content of stories; vice versa, the steady »narrative overflow« affects people's emotional state. As a result, patients are not anxious but, as Goldstein has it, embody their anxiety; they *become* their anxiety.

The dissolution of the self is the third core feature of a catastrophic reaction. Similar to the emotional overflow dynamics just described, the shattering of one's narrative capacity both reflects and contributes to the sense of a shattered self. Often the quality of patients' mental and affective life has been altered so drastically–even if the evaluative »normalizing« stickiness of their stories might tend to convince them otherwise – that they no longer even recognize themselves. There is a literal truth to it when patients state they feel lost. Losing oneself in an array of incoherent and fragmented narrative bits and pieces that constantly change is elementally intertwined with an incoherent and fragmented self-experience.

This is not to say that patients necessarily suffer endlessly and can never recover from catastrophic reactions. Goldstein's maxim that »symptoms are answers, given

by the modified organism, to definite demands: they are attempted solutions« ([11], p. 35) also applies to catastrophic reactions. Thus we feel encouraged to understand patients' catastrophic narratives in a similar way: as attempted solutions, even if, in the cascading chaos of the catastrophic reaction, these solutions cannot but be desperate and mostly fruitless attempts to react to the chaos. Whether due to neurological recovery in terms of neural reuse or learning to tell one's story in new, perhaps more dialogical and open-minded ways, many patients manage to eventually bring some order, coherence, and meaning to their shattered world [20]. Still, elements of the traumatic reaction may persist in one way or another for years. Even decades after the injury, the majority of neurotrauma patients report a continued sense of a lost and shattered self [24].

The Hinge of Narrative

Many of Goldstein's insights, developed in close cooperation with his friend and colleague, gestalt psychologist Adhémar Gelb, were gleamed from working with soldiers during and after World War I, when Goldstein was the Director of the Frankfurt Institute for Research into the Consequences of Brain Injuries. Goldstein's thinking profoundly influenced another great neurologist, Alexander Luria, who also worked with soldiers with traumatic brain injury, but from injuries inflicted during World War II [8]. So it is perhaps not surprising that Goldstein's influence continues to the present with another generation of military patients, those suffering from neurotrauma sustained in Iraq and Afghanistan at the beginning of this century. As recently as 2008 the Walter Reed Army Institute for Research in the United States concluded that symptoms of veterans who had suffered blast trauma were solely due to PTSD (post-traumatic stress disorder) [1]; the current theory in favour is that blast trauma brain injury increases vulnerability to certain psychiatric disorders, which would help explain the high rate of PTSD and traumatic responses among Iraq and Afghanistan war veterans.

This is not to deny that variations of the debate over etiology have been ongoing since WWI when the term »shell shock« was first introduced in the *Lancet* in 1915. This »war neurosis« was familiar to Goldstein, and one can indeed recognize significant overlap between catastrophic reactions and current PTSD symptomatology. In his studies of catastrophic reactions, focussing on rehabilitation and treatment, Goldstein, however, suggested a more holistic connection between the neurological and psychological sides of neurotrauma. Building on this idea, we have suggested in this paper that narrative functions as a hinge between the two sides – that is, as *one* hinge, not the only one. Given the paramount role of narrative discourse and communicative processes in this context, it is not surprising that the primary treatment for people with PTSD, whether they have a brain injury or not, is narrative exposure therapy [12]. A core component of this therapy is that the patient engages in restorying the traumatic experience, co-constructing it with the therapist who compensates for some of the narrative dysfunctions.

Less Forgotten

The psychological disruptions caused by higher cerebral dysfunction are still poorly understood. This is startling given the staggering proportion of people who suffer from impaired neurological functioning at some point in their lifetime. We know even less about how to effectively and efficaciously help heal these patients. This has not changed since Goldstein's days, nor from the time of Sacks' comments. But much of what we do know about rehabilitation and treatment can be traced back to Goldstein, whose ideas remain cutting edge even today. To alleviate our lack of understanding about the world of individuals with neurotrauma, the study of their broken narratives is one promising avenue. Also for this we have Goldstein, recently less forgotten, to thank.

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