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# Recurrent motifs as resonant attractor states in the narrative field: a testable model of archetype

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*Abstract:* At the most basic level, archetypes represented Jung's attempt to explain the phenomenon of recurrent myths and folktale motifs (Jung 1956, 1959, para. 99). But the archetype remains controversial as an explanation of recurrent motifs, as the existence of recurrent motifs does not prove that archetypes exist. Thus, the challenge for contemporary archetype theory is not merely to demonstrate that recurrent motifs exist, since that is not disputed, but to demonstrate that *archetypes* exist and *cause* recurrent motifs. The present paper proposes a new model which is unlike others in that it postulates *how* the archetype creates resonant motifs. This model necessarily clarifies and adapts some of Jung's seminal ideas on archetype in order to provide a working framework grounded in contemporary practice and methodologies. For the first time, a model of archetype is proposed that can be validated on empirical, rather than theoretical grounds. This is achieved by linking the archetype to the hard data of recurrent motifs rather than academic trends in other fields.

*Key words:* archetype theory, cognitive anthropology, cognitive science, historical analysis, folklore, mythology, recurrent motif

## Introduction

It is uncontroversial that, around the world and throughout history, *homo sapiens* tends to make the same kinds of myths and tales (Eliade 1954, 1958; Lehner 1956; Thompson 1960; Propp 1968; Cirlot 1971; Leach & Fried 1984; Stevens 1998; Üther 2004; Tresidder 2005; ARAS 2010). Archetype theory began with Jung's study of folklore and mythology (1956, *passim*), which he felt was very important in understanding the psyche: 'A knowledge of mythology is needed in order to grasp the meaning of a content deriving from the deeper levels of the psyche' (Jung 1919, para. 309).

Jung argued that recurrent motifs were associated with archetypes, but he often struggled defining archetypes rigorously (reviewed by Hogenson 2004), making empirical validation difficult and fostering continued scepticism of the archetype as an explanation. As will be discussed below, it is difficult to assess whether or

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not Jung believed archetypes *caused* motifs, but as we will see, the assumption that archetypes cause motifs can be a fruitful mode of inquiry. As evidenced by his numerous motif parallels (discussed in Jung 1956), Jung apparently thought early on that the existence of such motifs was good enough to explain the plausibility of the archetype as an explanatory structure. But as some point out (Pietikainen 1998), the existence of recurrent motifs does not prove that archetypes exist. Thus, the challenge for contemporary archetype theory is not merely to demonstrate that recurrent motifs exist, since that is not disputed, but to demonstrate that *archetypes* exist and *cause* recurrent motifs.

This requires a shift in focus to the question: what causes motifs, and can we define the archetype in terms of those causal factors? Doing this allows us to examine motifs and derive and refine the definition of archetype-as-motif-causer *empirically*. But does it stay true to the definition of the archetype?

This is a hard question to answer partly because of Jung's elusive definition of the archetype (Hogenson 2004), which varied considerably through his writings and has defied any easy existence proof. Previously scholars attempted to fix this by redefining the archetype in the theoretical terminology of other disciplines. Knox (2003) used the framework of developmental psychology to define it as the image schema. Hogenson (2001, 2009) used the framework of artificial intelligence theory to define it as an 'action pattern' in organism-environment dynamics. McDowell (2001) used the framework of dynamic systems to define it as a 'mathematical principle of organization' in a non—linear system. Stevens (2003) used the framework of evolutionary psychology to define it in terms of domain specific algorithms. Haule (2012) used the framework of evolutionary theory to define it in terms of nested hierarchies of species-specific behaviour patterns.[1]

These definitions may establish the plausibility of the archetype as an explanatory construct, since they define it in terms of established theories from other fields (i.e., image schemata exist, therefore archetypes exist), but they do not generate testable predictions or explicitly propose how archetypes generate recurrent motifs. They therefore remain theoretically derived definitions rather than empirically derived ones. They also lack detail and predictive ability. For example, viewing the archetype as an action pattern, algorithm, behaviour, principle, or image schema does not explain why stories about a hero who enters a cave to rescue a princess from a dragon by cutting off its tongues or heads recur throughout the globe (Ashliman 1987; Thompson 1960; Üther 2004), instead of stories where a hippo that is also a mosquito-man transforms into a turnip patch mist backwards every 92nd day for no reason. Why is one story fascinating, memorable and evocative, and hence putatively 'archetypal', but the other comes across as mere noise? Why does one story spontaneously show up everywhere, but another

[1] In Goodwyn 2012, I focus more on the archetypal images rather than attempt a definition of the archetype-as-such per se. The present essay is a continuation of that approach.

hardly ever emerge? The above theories do not address these questions, giving them less direct clinical applicability. It is the aim of this paper to propose a back-to-basics model of archetype working from the recurrent motif itself, rather than the more abstract formulations given above. From this analysis, the definition of the archetype can be developed from direct empirical observation, from which we can produce clinical applications and testable predictions.

**Studying recurrent motifs**

Jung often linked his theorizing on archetypes to recurrent motifs:

> The material brought forward—folkloristic, mythological, or historical—serves in the first place to demonstrate the uniformity of psychic events in time and space.
> (1919, para. 436)

To explain this uniformity, he posited that the unconscious mind contained instinctual processes that did not contain innate stories so much as nudge the psyche to create stories of similar theme and structure in the presence of typical life situations:

> Archetypes, so far as we can observe and experience them at all, manifest themselves only through their ability to *organize* images and ideas, and this is always an unconscious process which cannot be detected until afterwards.
> (1919, para. 440)

Jung theorized that archetypes, as 'forms without content', work by 'activating' in the presence of appropriate stimuli: 'When a situation occurs which corresponds to a given archetype, that archetype becomes activated', whereupon fascination, terror, or other powerful affects and imagery form and/or persist (1959, paras. 99–103). Jung argued that archetypes are context sensitive, requiring the proper environmental stimulation before 'activating':

> We experience archetypal situations, that is, situations that humankind has experienced from time immemorial. These situations always repeat themselves, in various forms. We experience them as we have experienced them at all times.
> (Jung & Meyer-Grass 2008, p. 162)

Beyond these observations, Jung generally did not explain exactly *why* these nebulous instinctive processes would produce one kind of story over another, what the characteristics of such expressions were and why one story should be considered 'archetypal', and another not, apart from vague appeals to evolution and animal behaviour (Hogenson 2009), which are not particularly convincing today. Outside Jungian psychology, however, cognitive anthropologists also study recurrent motifs, and their observations can be used to stimulate thinking about the archetype as a theoretical structure.

Cognitive anthropologist Justin Barrett (2007) introduces the subject: 'cognitive scientists of religion have begun to say much about how cross-culturally recurrent features of human minds inform and constrain religious actions' (p. 179). In general, cognitive scientists observe that cultural transmission is not a mere carbon-copying of stories and belief systems across generations, but a complex process that is influenced by universal cognitive principles. Anthropologist Dan Sperber argues that cultural transmission is complex and neurobiologically constrained:

> [the cross-cultural resemblance] among cultural items is to be explained to some important extent by the fact that transformations tend to be biased in the direction of attractor positions in the space of possibilities.
>
> (1996, p. 108)

Cognitive anthropologists Robert N. McCauley and E. Thomas Lawson elaborate:

> The cognitive foundations of the processes of cultural transmission make some sorts of cultural representations more likely to persist than others. Similarities between cultural representations turn primarily on these evolutionary vectors—which the character of human cognition shapes. Over many cycles of transmission divergences from these attractor positions will certainly arise; however, because of these cognitive constraints, subsequent transformations in further cycles of transmission will typically steer cultural representations towards one of the attractors again.
>
> (2002, p. 42)

This shaping by the 'character of human cognition' that McCauley and Lawson describe above may be seen as a process in which 'intuitive' or 'non-reflective' cognitive mechanisms over time result in recurrent motifs, as explained by cognitive scientists James Laidlaw and Harvey Whitehouse:

> cognitive scientists have developed quite a rich picture of the strengths and weaknesses of human cognitive capabilities. Some things we appear to do brilliantly: for instance, we recognize faces and remember patterns of behavior we have seen or heard on only a single occasion, perhaps days or weeks ago, perhaps under very different circumstances from those in which the remembrance occurs. Or we make astonishingly accurate and convergent interpretations of other people's emotional states based on cues so subtle that giving formal description of them and/or subjecting them to experimental measurement is extremely difficult. Even the world's most powerful supercomputers have difficulties performing tasks of this kind. . ..at the same time even an average home computer can carry out tasks that are utterly beyond our mental faculties. . .
>
> (2007, p. 15)

These constraints, it is argued, shape motifs across generations. Whitehouse adds:

> Certain systematic biases in the way we humans think persist despite all our efforts to transcend them. . ..Cognitively optimal concepts are ones that the human mind is naturally well-equipped to process and remember, or that readily trigger exceptionally salient or attention-grabbing inferences, *in the absence of any special training or inducement to*

> *learn such concepts*. Even when people have mastered a body of difficult-to-acquire concepts. . .they never outgrow their susceptibility to more natural ways of thinking.
> (2004, p. 189; emphasis in original)

In other words, cognitive scientists of religion propose that because of unconscious, universal psychological processes, we tend to tell and imagine images and stories that converge, over generations of story telling, upon 'attractor positions' that are a consequence of those processes:

> If there are aspects of our ideas about supernatural agency and ritualization that may be described as 'cognitively optimal', this is also true of the way certain religious *narratives* are put together, for instance as more or less sacred myths, legends, and histories.
> (Whitehouse 2004, p. 192; emphasis in original)

Such 'cognitively optimal' expressions are the result of phenomena described by cognitive scientists such as agency detection, intent, animacy, image schemata, and more (Atran 2002; Boyer 2001; Pyysiäinen 2009, *passim*). McCauley and Lawson, in their studies of ritual, argue that the set of these mental processes naturally emerges:

> With little, if any, explicit instruction, religious ritual participants are able to make judgments about various properties concerning both individual rituals and their ritual systems.
> (2002, p. 5; see also Sørensen 2007)

These judgments include beliefs in the efficacy of certain ritual actions over others, the order they 'should' occur in, various constraints on ritual roles, common points of variability in forms, and so on.

Thus, cognitive scientists studying recurrent motifs suggest that these motifs are the result of invariant elements of human minds and environments combining in typical ways. Accordingly, this process of motif-making can be compared to the phenomenon of biological niches: animal species will tend to fill in particular niches (i.e., large herbivore, flying predator, arboreal omnivore, etc.) in similar ways regardless of species history. Such niches are analogous to attractor positions. Cognitive theorist Ilkka Pyysiäinen (2009) describes a model not unlike Jung's:

> The architecture of the mind. . .shapes beliefs, thus creating cross-culturally recurrent patterns. This implies that not all concepts and beliefs have an equal potential for becoming widespread. The most successful representations in cultural selection are those that 'match' people's mental architecture, in that an existing 'slot' corresponds to the form of the representation in question.
> (pp. 3–4)

Pyysiäinen is quick to point out that this model *does not* require a strong nativist, evolutionary psychology or modular stance, as the forces that comprise the 'architecture of the mind' could all easily be self-organizing universal developmental achievements (see also Whitehouse 2007, p. 250).

The issue is the existence of *universal, reliably emergent* constraints or patterns, from whatever source, that provide the *substrate for* the generation of such attractor positions. The debate about whether such faculties are 'genetic', 'innate', 'learned', or simply 'emergent', however, is not relevant.

It is evident, then, that cognitive scientists studying religion and folklore appear to agree somewhat with Jung that some stories persist and spontaneously recur for reasons that have to do with universal psychological functions. Cognitive anthropologists, however, do not describe anything fully analogous to the archetype. Moreover, Jung's nativist suppositions are not universally shared by cognitive scientists, and Jung's frequent (vague) talk of 'innate instinct' (discussed below) is not well supported by the elucidation of known epigenetic development (Knox 2003, pp. 12–70).[2]

**Folklore perspectives**

Cognitive scientists and Jungians are not the only scholars that analyse recurrent motifs. Folklorists also have much to say on the subject; many have noted that recurrent motifs can be surprisingly specific. For example, the first two major episodes of the 8th Century Anglo-Saxon poem *Beowulf* (where the hero faces the monster Grendel and his mother) have been shown to parallel folktales and motifs in many other regions, and comprise both types 301 ('the Three Princesses') and 650A ('Strong John') of the Aarne-Thompson Folktale typing index—of which Beowulf is one example among 600 of type 301 alone so far that have been documented (Thompson 1960; Üther, 2004). In these tales, a bear-like hero of unusual strength defeats a monster who is raiding a king's palace, which in defeat flees wounded, followed by the hero's descent into a watery underworld where he finds a magic sword and defeats more monsters there, but is left there by his treacherous companions, only for him to find his way out anyway by various means (Garmonsway et al. 1971, pp. 331–39). Parallels to *Beowulf* have been found in areas such as Scotland, Ireland, Iceland, Wales, and Scandinavia which is perhaps not surprising given their proximity to Anglo-Saxon England. But there are also parallels in Africa, Armenia, Burma, China, Finland, France, Hungary, India, Italy, Japan, Mexico, Poland, Polynesia, Russia, Sicily, Spain, Turkey and the Americas (reviewed in Fulk et al. 2009, pp. xxxvi–xliii; see also Ashliman 1987, pp. 51–53). The fight between Beowulf and the dragon also has countless parallels worldwide.

Naturally, such wide parallels cannot be accounted for by cultural transmission alone, and even if it could it would not explain *why* such stories were transmitted so persistently rather than forgotten. Jungian theory predicts that such recurrence

[2] Note, however, that the term 'innate' has no agreed upon definition (Goodwyn 2010 and responses by Hogenson 2010; Knox 2010; Merchant 2010), making a rigorous analysis of Jung's supposed nativism very challenging.

is due to the archetypes, though debates continue about exactly what archetypes actually are. Moreover, it is not clear exactly *why* a given particular story should be archetypal. What is so special about it?

Cognitive anthropologists propose that with each retelling of a tale, subtractions and additions occur, but only some of these will 'stick' for various cognitive and emotional reasons and successfully become a part of a folk narrative. In time, stories will acquire 'cognitively optimal' or 'attractor state' elements, so that any story can, through the process of accretion, achieve the status of great legend, myth or folktale. This process of folklore element accretion seems to have occurred in the case of King Arthur, for example, according to historian Geoffrey Ashe (2003, pp. 109–21).

Folklorists also document the way folktales transform across generations (for detailed analysis, see Davidson 1978; also Lüthi 1982, 1984; Puhvel 1987, *passim*), but are more cautious about theory and less rigorous than the cognitive anthropologists. However, folklorists appear to agree that folktales transform *through* transmission, and gradually acquire widespread motifs along the way. An excellent example of this process is Davidson's (1978, pp. 80–94) analysis of the Lady Godiva story of Coventry. Davidson notes that Coventry has a lively tradition surrounding its famous legend, which originated in the 11th century and gained such motifs over time. In her day, Lady Godiva was praised by everyone as wise, devout and a generous ruler of Coventry. She died in 1067, but in the 12th century, monks recorded the story of her famous ride naked through the town, to convince her husband Earl Leofric of Mercia to remit an oppressive tax. In this early version of the story, he sarcastically suggested that only if she rode through town naked would he grant her request. So she did, and the fact that no one saw her was simply 'a miracle'.

Four hundred years later, a 16th century version reports that the local magistrates forbade anyone to look upon her as she rode through the city, and this time she was with her husband and an entourage. So great was the love of the townsfolk for Godiva that no one disobeyed the command, and so her husband was compelled to remit the taxation. Davidson notes that notable ubiquitous folkloric elements (which could be called attractor positions) have been added:

> First there is the story of the dutiful wife who performs some humiliating task at the bidding of a tyrant husband in order to benefit the common people. . .Second there are folktales of a clever wife or maid who fulfils seemingly impossible conditions. . .Thirdly there are tales of a noble heroine miraculously saved from shame.
>
> (ibid., p. 85)

The story persisted and has inspired yearly festivals with local women riding through Coventry to re-enact the famous story; this celebration survived several of the Church's attempts to eradicate it (which is itself telling). In the 18th century, the 'Peeping Tom' part of the story was added, wherein the infamous tailor looked at Godiva and by so doing was struck blind. The earliest records of the peeper (originally unnamed) state that his attempt to see her was noticed by the horses,

which neighed and revealed his shameful behaviour—only later was it added that he was stricken blind. Davidson draws attention to the 'fairy midwife' motif parallel found throughout folklore, where someone given power to see fairies is blinded by seeing things they are not supposed to see, which is also paralleled by numerous tales of being blinded by Otherworld visions.

Further analysis comes from historian of folklore, Max Lüthi:

> The stability of fairytale transmission over centuries, which constantly provides grounds for amazement, is only partially ascribable to literary influence (which was for a long time underestimated but presently tends to be overestimated). The listener's demand for the familiar, for what was felt to be valid, was also a factor; and the demands imposed by narrative and mnemonic technique on narrators, as well as their artistic sense, conspired to maintain what was successful in terms of rhythm and sound. The narrator commits himself voluntarily to a formulation which seems to him to be optimal.
>
> (Lüthi 1984, p. 69)

Lüthi theorizes that folktales have similar characteristics because of the oral transmission process and the psychological influences on teller and audience. Like the cognitive anthropologists, he explains that the process of storytelling shapes folktales into similar patterns that *self-correct* deviations. The qualities described by Lüthi are similar to the ones identified by cognitive science and include:

1. Objects and settings that tend to be described in vivid, static terms, like gold, crystal, metal, etc, and/or in basic colours like black, white, red, or blue.
2. Characters who are 'depthless', meaning they are simple types that act with very little reference to internal dynamics or psychological conflict, and often in extreme social positions (king, prince, etc).
3. Stories that have extreme opposites in imagery, double or triple events in a rhythmic pattern, and have simple plots (task/fulfill, lack/gain, etc).
4. Environments that are also general, but simple and easy to visualize, with castles, lakes, forests, mountains, caves, and frequently are of a uniform substance (glass mountain, brass city, etc).
5. Heroes who are made highly distinctive through various means (the youngest, the oddball, the 'stupid one', the most beautiful in the land, etc).

These qualities match up somewhat with the predictions of cognitive scientists, the details of which I will explain later.

Lüthi observed that Wilhelm Grimm (2003), when writing down the famous folktales he had collected (along with his brother Jacob Grimm), changed the tales from the above characteristics for various reasons (reviewed by Zipes 2003, pp. xix–xxxviii). Despite Grimm's changes, however, when these folktales were later recorded by storytellers in Europe continuing the tradition, the changes did not endure: 'when the Grimms' folktales returned to the folk, they tended to become purified and in many ways have again approached the style that was

weakened by Wilhelm Grimm' (Lüthi 1982, p. 110). His example: in Grimm's version of *Rapunzel*, the prince becomes 'overwhelmed with grief and despair' when he finds Rapunzel gone, and jumps from the tower. This is a deviation because descriptions of internal emotions are avoided in folktales. Folktale characters *act*, rather than feel. However, this deviation corrects itself in subsequent tradition: 'in oral tradition it corrects itself... In two later narratives derived independently...the passage is corrected' (Lüthi 1982, p. 111) and the witch simply throws him from the tower. This and other examples led Lüthi to conclude that 'one may indeed say that in the oral tradition of the folk, the folktale style passes through a process of self-correction' (Lüthi 1982, p. 111).[3]

**Commonalities in opinions on recurrent motifs**

Despite many differences in approach and method, the cognitive, Jungian and folklorist perspectives can at least agree that the reason motifs recur has *something* to do with universal commonalities in human cognition, emotion and memory. Not all stories are created equal: some stories will 'stick' or resonate with the listener and be more likely to be passed on. The question is: why are they 'sticky'? These 'sticky' stories occupy all three kinds of investigation.

In fact, regardless of which origin one favours, one can consider all the possible narratives as existing together on a field, but with a 'terrain' corresponding to the likelihood of such a narrative being transmitted. Troughs correspond to high likelihood, acting like gravity wells on narratives over time. These gravity wells, or attractor points, represent stories that align well with the reliably emergent universal patterns in the human mind (whatever they may be, and whatever their origin is), and so stories will, over time, tend toward those positions. Since stories are constrained by the limitations of human memory, attention, visuo-cognitive ability and emotional tone, eventually similar *themed* stories will emerge despite large distances in time and space.

**Analogy: human language development**

An analogous model has been proposed for the development of *languages* throughout history, as provided by Terrence Deacon (2010). Deacon states that though languages vary, each must still be learned by new generations. Therefore they will be shaped by learnability factors, as not all conceivable languages will be equally easy for human children to learn. There will always be reliably emergent constraints on behaviour and cognition that will encourage a particular language to conform to certain patterns. Human perceptual biases and constraints

[3] He concludes with 'the fairytale takes on the shimmer of the perfect, the indestructible, the timeless, the absolute, and with it that of the transcending, even of the transcendent' (Lüthi 1984, p. 13).

in tonal range, rhythm perception, the ability to differentiate various sound patterns, and also the mechanics of the oropharyngeal musculoskeletal and neuroanatomical structures of *homo sapiens* will play a part. So will biases in semantic conceptual tendencies of our species; all of these characteristics are variable but not infinitely so, staying within certain parameters. Therefore, the most 'learnable' languages will preferentially survive cultural transmission over time:

> A given language should reflect selection favouring learnability, early acquisition, and ease of use concerning which features are retained or lost over the course of its historical change. . .So as brains have adapted to the special demands of language processing over hundreds of thousands of years, languages have been adapting to the limitations of those brains at the same time, and a hundred times faster. . .the differential reproduction of language structures through history will be dependent on the fidelity and fecundity of their transmission. Not only will this process be subject to selection with respect to semiotic and pragmatic demands of symbolic communication, it will also favour structures that are more easily acquired by immature brains undergoing activity-dependent intraselection of neural circuitry. Indeed, just as evolvability is aided by evolution-like processes involved in ontogenesis, we should expect that the social evolution of language should itself exhibit analogous processes. . .
>
> (Deacon 2010, p. 9005)

This same argument can be applied to folk narratives and suggests that cultural transmission will, because of the constraints on human learning, memory, and cognition, produce a finite (though large) collection of possible outcomes, with some outcomes much more heavily weighted than others. The results of this process are recurrent motifs.

**Psychological resonance**

Whatever one's theoretical beliefs, it is evident that out of all possibilities, some mythic motifs will be more 'psychologically resonant' than others—the difference comes in *why* we believe this occurs. This is a testable question. To facilitate thinking here, I define psychological resonance (PR) as *a characteristic that can be applied to any image or narrative that describes its mental 'stickiness', its tendency to emerge spontaneously and/or its intergenerational staying power.*

More specifically, highly 'resonant' expressions are defined as those which are:

1. Highly resilient across generations of transmission, especially oral transmission.
2. Resistant to conscious efforts at eradication (e.g., the Lady Godiva story).
3. Spontaneously and independently emergent cross-culturally even across large distances in time or space.

Expressions that satisfy the above criteria (as borne out by studies in folklore or cross-cultural symbolism) are defined as highly *resonant* and represent troughs in

the narrative field described above. Narratives that audiences like to experience repeatedly, like folktales or myths, are defined as more resonant than those that do not have such staying power, like jokes, which spread quickly but 'fizzle out' equally rapidly. What is not included in this definition is *why* a given expression is resonant—that is, where various theoretical and/or philosophical models can suggest testable predictions. For example, a model based on cognitive anthropology and folklore analysis *might* propose that high PR expressions should:

1. Have a high proportion of elements that align with the 'intuitive thinking patterns' described by cognitive and developmental scientists: image schemata, agency detection, intuitive physics, folk biology, force dynamics, essentialism, causal reasoning and shape (see Gazzaniga et al. 2002, pp. 499–611; Karmiloff-Smith 1996, *passim*). In other words, high PR expressions will be full of personifications and concrete, easily imagined objects or people moving through space in mostly typical ways. They will contain characters doing mostly expected things in mostly expected ways, and will be devoid of a lot of violations in the expectations of folk biology, force dynamics, cause and effect expectations, and so on.
2. However, they will also be 'minimally counterintuitive' (a concept developed by Barrett 2007); that is, a story or image that aligns *too* well with intuitive expectations will be dismissed as prosaic and unremarkable. Therefore, in addition to aligning well with non-reflective beliefs described above, a highly *resonant* expression will be likely to have one or a small number of *counterintuitive* elements. This is because, as Barrett argues, expressions having *all* intuitive elements will be ignored as commonplace, whereas too many counterintuitive elements will be confusing and difficult to visualize and remember. Expressions that have a few counterintuitive elements will grab attention due to their novelty and will be more easily recalled and visualized.
   Barrett gives an example:

> Concepts that too greatly violate intuitive expectations generated by mental tools would be difficult to understand, remember, and communicate at a later time. For instance, a dog that experiences time backwards, is born of a rhino mated with a bullfrog, that sustains itself on graphite, speaks Latin, and changes into cheese on Thursdays would be a difficult concept to transmit faithfully. Such a concept's primary limitation is that it so greatly violates the expectations (non-reflective beliefs) about dogs generated by human mental tools, that the conceptual structure of *dog* is undermined.
>
> (2007, p. 187)

The above dog violates, in order, the non-reflective beliefs governing cause and effect (backwards time), folk biology (such an animal mating is wrong, what the dog eats is wrong, and animals don't speak), and finally, essentialism (cheese has a different kind of 'essence' than animals). One could make the example even more

non-resonant by allowing the dog to violate force dynamics through telekinesis, or agency, by describing it as without any intentions, and intuitive physics by allowing it to walk through walls. Such a dog would be as poorly resonant as an utterly commonplace dog that violates none of the above. A cat, however, that experiences time normally, is born of cat parents, eats cat food, always stays a cat, *but speaks Latin*, is an example of a 'minimally counterintuitive' expression that is likely to be much more resonant. Thus, high PR expressions are predicted to have a low, but non-zero number of intuitive violations in them. Personification of story elements will be the rule rather than the exception, as non-human things with human mentality and intentionality are easily comprehended and are minimally counterintuitive.

3. Resonant expressions will be emotionally evocative, perhaps stimulating and satisfying the convergent affective systems involving fear, rage, panic, play, care, lust, seeking, and hunger (Goodwyn 2012, pp. 23–27, pp. 28–59, pp. 202–05; Panksepp 1998, *passim*, 2005). Note that Jung requires archetypal images to be affectively charged and/or 'numinous' (Jung 1964, p. 87; von Franz 1996, p. 10). The most resonant expressions will be likely to trigger strong affects, such as the shocking eroticism and shame of Godiva's naked ride, the voyeurism of Peeping Tom and the vengeful satisfaction at his blindness, the piety and inspiring loyalty of the citizens toward their Lady (an element which overtook the vague 'it's a miracle' explanation), and so forth. High PR expressions should have vivid, emotionally satisfying content and low PR expressions are predicted to have a cool, detached quality or will be emotionally frustrating.
4. Resonant expressions should be sensually vivid and clearly defined. Expressions containing creatures moving through clearly defined and vivid environments that are simple and not overburdened with descriptors, yet not overly abstract either, are likely to be more resonant. Middle level categories that are easy to visualize like 'shimmering sword' will therefore be preferable to abstract categories like 'weapon' or dense expressions like 'quillioned pattern-weld blade with Brighthampton scabbard and cross'. High PR expressions should, therefore, contain a lot of sensually vivid, simple, middle-level category descriptions, rather than very specific or very general and abstract descriptions. Objects and settings will tend to be described in vivid, static terms such as gold, crystal, metal. Descriptions will use basic colours like black, white, red, or blue, rather than ambiguous, complicated or changing terms. Characters will be simple types that act with very little reference to internal dynamics or psychological conflict, and they will often be extremely distinct in some way, for example in their social position (king, prince, god), or in their beauty, power, evilness or ugliness. Internally complex characters with indeterminate or prosaic qualities are less likely to be resonant.
5. Narratives with a sense of timelessness, such as stories set 'long ago' or in the eternal 'dream time' of the gods (Eliade 1954, pp. 17–73; Sproul 1979,

pp. 1–31; von Franz 1996, pp. 37–46, 2001, pp. 63–145) are likely to be more resonant. Folklorists suggest they evoke a satisfying 'oceanic' feeling. Cognitively, such generality in time and space allows a narrative to be applicable to many settings, easily visualized and adapted. Thus, high PR expressions are less likely to contain specific identifiers of time and space.

6. Rhythmic and prosodic utterances will be likely to have a special resonance for their 'musical' quality, which enhances recall and emotional engagement. Consider the statement of folklorists Robert Stockwell and Donka Minkova:

> the primary role of meter [is] its mnemonic value. . .Beyond this obvious primary function, the rhythm that results from the performance of metrical regularity is intrinsically pleasurable. . .[and these derive] from a set of intrinsic properties of language. . .either onset identity ('alliteration'), as in Old English, or coda identity ('rime'), as later. These intrinsic properties are universal in language, within a small range of variation.
>
> (1977, p. 59)

Many of the world's oldest myths were originally in verse form, which adds strength to the validity of this criterion. Thus, high PR expressions are more likely to contain rhythmic or prosodic elements (such as 'Magic mirror, on the wall. . .') than low PR expressions.

7. Resonant stories will have simple plots such as a task to fulfil, or a progression from lack to gain. They will have a sense of urgency and conflict, but contain some kind of dramatic reversal or unforeseen event. Common themes include: help from mysterious or unknown powers, the weak prevailing over the powerful, self—destructive actions that turn out beneficial in the end, victory or catastrophe that is suddenly reversed, evil that thwarts itself, good intentions leading to harm, inaction leading to weal. Resonant narratives also often show that appearances are deceptive (this is identified by Lüthi as the most common folktale theme). Thus they typically contain irony. Non-resonant expressions will have no repetition, overly complex plots or no plot, and no unexpected reversals of events or irony.
8. Resonant stories will have an 'interconnected' quality, for example things may occur 'in the nick of time', or events may recur in doubles or triples. Both characters and events are likely to come in contrasting pairs and to interact in just such a fashion as to give the impression that though objects and characters are sharply drawn and distinct, they are nevertheless part of a teleologically organized process. Non-resonant expressions will have no repetition and will appear disjointed, purposeless and randomly juxtaposed.[4]

[4] The quality of interconnection shares many similarities with synchronicity. If the quality of interconnection proves to correctly predict resonance, this may help explain why events that appear to have a high level of synchronicity are particularly resonant and emotionally powerful. Moreover, with further investigation, we may be able to better characterize perceptions that 'trigger' a sense of acausal connection.

It is important to note that these predicted features are hypothecated without reference to evidence about whether a narrative has lasted across generations, or has been found to be independently invented cross-culturally. Rather, it is predicted that resonant narratives *should* be more likely to contain some or all of the above elements, and narratives that are not resonant (that do not survive transmission easily), should be less likely to. I invite clinicians and researchers to test these predictions against known recurrent motifs, and against clinical data. The most resonant dreams, patient self-narratives, psychotic fantasies and ritualistic obsessions (the most memorable, durable, and 'sticky') should also have the above qualities. If they do not, the criteria will need to be refined.

In summary, it appears humans have a tendency to selectively transmit folktales, myths and legends in such a way that over multiple retellings they will drift into recurrent, resonant 'attractor positions' that share the same characteristics and themes regardless of particular origin. This can occur quickly, such as when a story 'spreads like wildfire' (and subsequently persists) or gradually builds over generations. Such attractor states will be associated with various universal and reliably emergent learnability and emotional factors that tend to preserve some narratives over others. The above criteria are hypothetical characteristics based on cognitive science and folklore studies, but it is up to empirical study to verify what they are. This puts us in the position to propose a testable model for the archetype, since in the present work we are proposing that archetypes generate motifs through the mechanism of psychological resonance. Those criteria which most reliably produce resonant narratives are therefore defined to be archetypal.

The attractor state model therefore defines the archetype as *the collection of psychological constraints and biases, of whatever origin, that work in concert to create one or more resonant attractor states in the narrative field*. It is a *group of processes* that can increase the probability of generating and retaining, say, a dragon slayer story anywhere. Specifically, these constraints include the particular reliably emergent cognitive, semantic, memory, emotional, and visuospatial biases on human thought—whatever their origin may be—that are applicable to a given typical situation. Naturally at this point they are not fully characterized, but are put forward as a tentative, testable model inspired by cognitive anthropology and folklore study. The model predicts that these constraints and biases should include, but need not be limited to:

1) minimal counter-intuitiveness
2) emotionality
3) sensual vividness
4) indeterminacy in time and space
5) biasing toward middle-level categories
6) low complexity
7) containing rhythmic and prosodic elements
8) having simple plots with reversals and/or irony
9) apparent interconnection of events.

Non-resonant expressions will be overly counter-intuitive or overly mundane, emotionally detached or frustrating, sensually vague or abstract, specific in time and space, contain over-specific or over-general categories, be internally complex or ambiguous, will lack any rhythmic or poetic qualities, will lack a clear plot, will lack reversals and interconnection. As will be seen, one advantage of this definition is that it sets aside the question of origins and focuses on the constraints themselves and links them tightly with motifs.

**Discussion: comparing the attractor state model to Jung's archetypes**

In the above, I have proposed a model of archetype working from the recurrent motif. If the recurrent motif is central to our definition of the archetype, this model also provides a method for refining the definition empirically using the features of recurrent motifs and clinical data. We may be departing somewhat from Jung, however, in such a model. For example, Jung writes that the archetype

> Can be conceived as a mnemic deposit. . .which has arisen through the condensation of countless processes of a similar kind. In this respect it is a precipitate and, therefore, a typical basic form, of certain ever recurring psychic experiences.
>
> (1971/2005, para. 748)

And he states further that the archetype

> Can only be explained assuming them to be deposits of the constantly repeated experiences of humanity. . . [they] are a kind of readiness to produce over and over again the same or similar mythical ideas. Hence it seems as though what is impressed upon the unconscious were exclusively the subjective fantasy-ideas aroused by the physical process. We may therefore assume that the archetypes are recurrent impressions made by subjective reactions.
>
> (1953, para. 109)

Jung appears to understand the archetypes in terms of biological perceptual predispositions, 'deposited' via an undefined evolutionary process, which produce recurrent motifs. Thus, he does not work backward from the motif as I have done, but starts more foundationally with biological assumptions in an attempt to show how it could *possibly* produce motifs, but no specific mechanism is given. Because of this choice, any attempt to construct a testable model from Jung's speculations forces us to diverge from Jung. For example, it appears that Jung is saying that repeated encounters throughout the history of our species have left some sort of mark on the psyche that somehow generates 'recurrent impressions made by subjective reactions'. But what mythic ideas are related to what recurrent species challenges? *Why* do we tell stories of dragon slayers more often than aardvark slayers? Which 'certain ever-recurring psychic experiences' leave such an imprint? Which physical processes? And exactly how does 'a kind of readiness' behave?

These are naturally criticisms from hindsight. Jung's choice to work from early 20th century biological notions was a natural one, but resulted in a lack of specificity and the detail needed for a straightforward empirical approach. The attractor state model is advantageous empirically because it provides these details, but necessarily focuses out of some ideas (as discussed by Knox 2003) such as the archetype as eternal metaphysical entity, which–though possibly valid–is outside the realm of empirical inquiry at present.

The attractor state model is only concerned with *which* potential criteria produce resonant themes and which do not, irrespective of origin. It asks only 'what are the criteria for resonant expressions?' not 'what creates the criteria?'—that must come later, empirically, after we have firmly established what they are. It is therefore 'closer' to the data from motifs than the more comprehensive, but more speculative theories of Stevens, Knox, Haule, Hogenson and McDowell. It *does*, however, have the ability to generate data to eventually *judge* these more general theories of archetype.

Thus, the attractor state model proposes a method of analysing clinical narratives and dreams, and differentiating them into those which are archetypal and those which are not, which is something the other models do not aspire to do. The present proposed criteria for resonance are inspired by the findings of cognitive anthropologists and folklorists, and my own explorations (Goodwyn 2012, *passim*). But whether these criteria are valid can—using this method—be determined *empirically*. This method may therefore compel us to abandon Jung's hypotheses about 'ancestral deposits'—or it may not—we are free to let the data reign.[5] But before such a task is attempted, the present model allows us to *clearly define what constraints and characteristics produce the most psychological resonance*. Once accomplished, we will be far better equipped to determine the *origins* of such constraints and characteristics, whether biological, developmental, mathematical, interactional, or some combination.

The reviewed theories of the archetype give well-reasoned proposals for how motif-making constraints might arise based on the findings of other disciplines, but sparse detail is provided concerning what those constraints actually are beyond abstract principles. They do not characterize features of recurrent motifs, they cannot differentiate between resonant and non-resonant expressions, and they cannot make any predictions. They do, however, give us solid theoretical reasons for believing such constraints exist in themselves, whether or not they fully agree with each other on why they exist. In any case, by postponing the theory of the origin of the constraints for now and focusing on the empirical search for what the constraints *actually are*, archetype theory, as proposed here, becomes an empirical endeavour that remains within clinical and experimental analytical psychology.

[5] The reference to emotional content among the criteria remains an avenue in which motifs may have evolutionary or biological 'deposit' content, as affective neuroscientists (Panksepp 1998, 2005) continue to advance our knowledge of the way evolution has shaped our emotional responses.

Any expression that has been independently identified as a resonant attractor state via cross-cultural studies (such as the ARAS, the folklore index or by historians of symbolism) or longitudinal study (such as the Lady Godiva, King Arthur, or Grimm's fairytale analysis) can be examined by clinical and experimental analytical psychologists to see if they have the above qualities. Such qualities are inspired by cognitive science and folklore studies, but *any set of criteria* could be proposed or tested against the recurrent motif. Predictive validity will allow us to refine these criteria with further data.

## Conclusion

In summary, the attractor state model provides us with more than a hypothesis of archetype in terms of where the (generically defined) constraints may come from. Instead it postpones questions of origins and focuses tightly on *what* the constraints are, *how* resonant motifs arise, and *why* some motifs are resonant where others are not, allowing for easy recognition in clinical practice and straightforward testability in research.[6] Using the presently proposed criteria, a minimally counter-intuitive, rhythmic, emotionally sharp narrative with middle-level objects and characters, with an indistinct setting in time and place, with a simple conflict-oriented plot with dramatic reversals and a sense of inter-connectedness should be more resonant (that is, more memorable and 'sticky') than a story without these qualities. This prediction should be tested empirically in both research and clinical settings.

Firmly linking archetype to motif in this manner may diverge somewhat from Jung's original intention. We may not ever be sure, given Jung's multiple definitions and ambiguous language. But it provides us for the first time with a method of refining the definition of archetype (as offered here) with direct empirical study rather than theoretical speculation, and frees us from dependency upon any particular framework outside analytical psychology, apart from drawing inspiration from whatever field to propose further criteria. Such proposed criteria can subsequently be tested against known recurrent motifs and clinical material—for example, themes found to resonate strongly with patients. From this methodology, we will be able to more clearly differentiate which clinical narratives and dreams are more resonant because we will have an empirically derived set of criteria.

As a thought experiment, try to recall the story about the hippo. This should be difficult, even though it has the same number of words (20) as the dragon slayer story, because I intentionally designed it to be non-resonant. Clinically, some life stories, fantasies, obsessions and dreams will be more resonant than others. Jungian psychology attends to resonant motifs and resonant characters like gods, spirits

[6] Research programmes could be devised which present subjects with narratives and images to measure resonance directly via ability to recall stories with and without the proposed criteria for resonance, not unlike the ASI study of Rosen et al. (1991).

and dream or fantasy beings, but has not always provided clear criteria by which to judge. As models of the archetype become more rigorous and testable, we should in the future be able to more easily judge that question. Continued investigation of recurrent motifs can give us more sophisticated tools to understand the clinical narratives that contain them.

I will conclude with some observations of relevance to clinical work. I proposed that non-resonant narratives will be confusingly counter-intuitive or overly mundane, emotionally detached or frustrating, sensually vague or abstract, specific in time and space, will contain over-specific or over-general categories, will be internally complex or ambiguous, and will lack any rhythmic or poetic qualities, a clear plot, reversals or irony and interconnection. Note that there can often be a similarity between these qualities and our patients' self-narratives when they come into therapy for the first time. It is possible that psychotherapy works partially because patients and therapists continually examine a patient's story, and slowly co-create a more resonant narrative over time. Research in Prolonged Exposure therapy (Foa et al. 2007, pp. 6–16) provides some support here. More resonant self-narratives will, significantly, be more emotionally satisfying and contain a strong sense of inter-connection and purposefulness. The tendency to gravitate toward greater resonance of self-narrative (facilitated by therapy) may, therefore, contribute significantly to endogenous psychological healing and integration. This can be tested clinically by having patients describe a self-narrative before and after therapy and correlating resonance of self-narrative with any clinical improvement.

## Translations of Abstract

Au niveau le plus élémentaire, les archétypes représentent une tentative de Jung pour expliquer le phénomène des motifs récurrents dans les mythes et les contes populaires (Jung 1956, 1959, para. 99). Mais l'archétype demeure controversé en tant qu'explication de motifs récurrents, car l'existence de motifs récurrents n'est pas une preuve que les archétypes existent. Ainsi, l'enjeu pour la théorie contemporaine de l'archétype n'est pas simplement de démontrer que les motifs récurrents existent, puisque cela n'est pas contesté, mais de démontrer que les archétypes existent et induisent les motifs récurrents. Cet article propose un nouveau modèle différent des autres car il explique comment l'archétype crée des motifs en résonance. Forcément, ce modèle clarifie, modifie et adapte les idées fondatrices de Jung sur l'archétype, de façon à donner un cadre de travail basé sur la pratique et les méthodologies contemporaines. Pour la première fois, un modèle d'archétype est proposé, qui peut être validé dans un champ empirique plutôt que théorique. On y parvient en reliant l'archétype aux données concrètes des motifs récurrents plutôt que dans des orientations académiques d'autres champs.

Auf ganz grundlegender Ebene repräsentierten die Archetypen Jungs Versuch, das Phänomen der regelmäßig wiederkehrenden Mythen und Motive in den Volkssagen zu erklären (Jung 1956, 1959 § 99). Aber der Archetyp bleibt als Erklärung von häufig vorkommenden Motiven kontrovers, da die Existenz von wiederkehrenden Motiven die

Existenz der Archetypen nicht beweist. So besteht die an die gegenwärtige Archetypentheorie gestellte Herausforderung nicht darin zu zeigen, daß es die stetig wiederkehrenden Motive gibt, da dies nicht in Frage gestellt wird, sondern zu zeigen, daß *Archetypen* existieren und das Wiederkehren von Motiven *bewirken*. Der vorliegende Beitrag entwirft ein neues Modell, welches sich von anderen dadurch unterscheidet, daß es erklärt, *wie* der Archetyp resonante Motive erzeugt. Notwendigerweise klärt, modifiziert und adaptiert dieses Modell einige von Jungs grundlegenden Ideen über Archetypen. Dies geschieht in der Absicht, einen Arbeitsrahmen bereitzustellen, der auf heutiger Praxis und Methodologie fußt. Zum ersten Mal wird ein Archetypenmodell vorgestellt, welches eher auf empirischer als auf theoretischer Basis validiert werden kann. Dies wird durch die Verbindung des Archetyps mit den harten Daten wiederkehrender Motive erreicht, was einen Unterschied macht zu akademischen Trends auf anderen Gebieten.

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Al livello più basico gli archetipi rappresentano il tentativo di Jung di spiegare il fenomeno della ricorrenza dei miti e dei motivi popolari (Jung 1956, 1959, para. 99). Ma l'archetipo resta controverso come spiegazione dei motivi ricorrenti, poiché l'esistenza di motivi ricorrenti non prova che l'archetipo esista. Quindi la sfida per l'attuale teoria degli archetipi non è semplicemente dimostrare che esistono motivi ricorrenti, poiché ciò non è in discussione, ma dimostrare che gli archetipi esistono e causano motivi ricorrenti. Il presente lavoro propone un nuovo modello che differisce dagli altri nel fatto che spiega in che modo gli archetipi creano motivi risonanti. Tale modello necessariamente chiarisce, modifica e adatta alcune delle idee seminali di Jung sugli archetipi in modo da fornire una struttura di lavoro basata sulla pratica e sulle metodologie attuali. Per la prima volta viene proposto un archetipo che può essere convalidato su basi empiriche piuttosto che teoriche. Ciò si ottiene legando l'archetipo ai dati forti di motivi ricorrenti piuttosto che a tendenze accademiche in altri campi.

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На самом базовом уровне архетипы представляют собой попытку Юнга объяснить феномен повторяющихся мифологических и фольклорных мотивов (Юнг 1956, 1959, пар 99). Но архетип представляется противоречивым объяснением повторяющихся мотивов, поскольку существование повторяющихся мотивов не является доказательством существования архетипа. Таким образом, испытанием для современной теории архетипов оказывается не просто необходимость продемонстрировать существование повторяющихся мотивов – ведь это не оспаривается, – но продемонстрировать то, что *архетипы* существуют и являются *причиной* повторяющихся мотивов. Настоящая статья предлагает новую модель, непохожую на другие; она объясняет, как архетипы создают резонансные мотивы. Эта модель разъясняет, поправляет и адаптирует некоторые из основополагающих идей Юнга об архетипе, предоставляя рабочую рамку, опирающуюся на современную практику и методологию. Впервые предлагается такая модель архетипа, которую можно оценить на эмпирической, а не на теоретической основе. Это достигается тем, что архетип связывается с достоверной информацией повторяющихся мотивов как таковых, а не с академическими тенденциями из других областей.

En el nivel más básico, los arquetipos representaron la tentativa de Jung para explicar el fenómeno de motivos recurrentes de mitos y cuentos popular es (Jung 1956, 1959, el párr. 99). Pero el arquetipo escontroversial para la explicación de motivos recurrentes, y la existencia de motivos recurrentes no demuestra que los arquetipos existen. Así, el desafío para la teoría contemporánea de los arquetipos es, no solamente demostrar que los motivos recurrentes existen, puesto que ello no está en discussion, sino demostrar que los arquetipos existen y causan los motivos recurrentes. El presente trabajo propone un nuevo modelo que, a diferencia de otros, explica cómo el arquetipo crea motivos resonantes. Este modelo necesariamente clarifica, modifica y adapta algunas de ideas originales de Jung en relación al arquetipo para proporcionar una marco de trabajo basado en la práctica y metodologías contemporáneas. Por primera vez se propone un modelo de arquetipo que puede ser validado empíricamente antes que teóricamente. Esto se logra ligando el arquetipo a los datos sólidos de los motivos recurrentes antes que a las tendencias académicas en otros campos.

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