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At the Origin of Flood Mythologies: Synthesis of Three Papers

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Abstract: This short article offers a survey of three statistically based on phylogenetic studies of flood myths around the world. The three studies have been published in French. The results offer perspectives on the flood myths of the world having spread with population movements already in the Palaeolithic era. The purpose of this article is to make these results accessible to a wider readership with an added discussion of the collective findings.

Flood myths are widely found around the world. They are very rare in Africa, which stands out as an exception (Baumann 1936; Le Quellec & Sergent 2017: 283–284), where they might have been replaced by the myth of the 'Devouring Calabash' (Paulme 1986: 277; but, on the number of flood myths, more numerous than expected in Africa, see Le Quellec 2021). The wide dissemination of flood myths could be interpreted as a memory of the myth of the Biblical flood, as an impact of missionary efforts or as a mark of the myth's much greater antiquity. However, most of the myths of the flood around the world do not appear to be related to the Christian or Muslim traditions (see Quellec & Sergent 2017: 277–278 and works there cited). On the other hand, Werner Müller (1930: 92) indicated versions very close to the Amerindian myths are found among the Andamans. A historical relationship between these traditions would situate its spread into the Americas with the first human migrations to those continents. This would constitute proof of the great antiquity of at least some versions of the flood. If we accept the diffusionist hypothesis, most flood myths could have spread:

1. From Central Asia (accounting for most traits; see van Binsbergen 2007)
2. From South-East Asia (Oppenheimer 1998)

3. From Africa, during the Out of Africa process (Witzel 2012)

I tested the hypothesis of a Paleolithic diffusion of a set of flood-related motifs in three different studies all based on a statistical approach. The three studies were published in French. The goal of the present paper is to make the conclusions available to a wider range of readers.

Study 1: *Entre Ciel et Terre* (2017a)

The first study is based on all the motifs concerning the flood included in Yuri E. Berezkin's database (Berezkin & Duvakin, n.d.). When the definition of a motif was large enough to include several types of disasters (flood, ekpyrosis, etc.), only the tales directly linked to the flood were retained, and the others were not taken into account. The level of analysis chosen was that of the cultural area (as defined by Berezkin). This prevents a given people from losing one or more motifs, which could distort the phylogenetic message. Indeed, within a cultural area, such a particular motif is most likely to have been preserved by a neighbouring people. Areas with at least five motifs (1/5 of the number of possible motifs) were selected. *Mesquite 2.75* software was then used to build the 2,000 most parsimonious phylogenetic trees, and synthesize all nodes found in at least 50% of the reconstructed trees.

The retention index (0.52) suggests a partial 'collective' transmission of the flood's motifs.

In order to determine the main origin of the major part of the diluvian motifs (this analysis only allows trends to be highlighted), the tree was successively rooted in:

- The Bantu area, which would suggest an origin in Africa
- The main Eurasian group, including the Bantu area, which would suggest an origin in Central Asia with back-migration to Africa
- The root of the clade clustering the areas of South-East Asia / Oceania and the areas of South America, which would suggest an origin in South-East Asia

Two reconstruction methods (parsimony and maximum likelihood) were used to reconstruct the motifs at each root of the tree and only the motifs associated with a probability greater than 75% according to both methods were retained. No motifs were commonly reconstructed at both the root of African and Southeast Asian areas.

During the present century and especially across the past decade, research has shown a global pattern in mythological motif distribution that corresponds roughly to the northern and southern hemispheres. Those motifs that have left traces across the southern hemisphere – i.e. in Africa, Southeast Asia, Australia and South America – appear to reflect mythology carried in the first migrations out of Africa. Those found across the northern hemisphere appear to reflect pronounced changes and developments that occurred in mythologies in Eurasia that were subsequently carried in a second major wave of immigration to North America.¹ The low number of motifs related to the flood in Africa and the absence of motifs commonly reconstructed at both the root of African and Southeast Asian areas do not support a hypothesis of diffusion of a diluvian complex with the out-of-Africa migrations. However, the hypothesis of an African origin of certain relevant motifs is not completely excluded. Indeed, for statistical reasons, only one African area is represented in the corpus, which necessarily biases the results. Berezkin's motif C5A *Bird-scouts* has been reconstructed with an African (not with a Southeast Asian) root. This motif has a context of during or shortly after a flood, as which point "[b]irds or humans

later changed to birds are sent to explore the earth (is it dry, are any survivals, to investigate why smoke rises to the sky, etc.) or to bring some soil to make the land that would be good for living" (Berezkin & Duvakin, n.d.: C5A). It is present in Australia, a continent populated very early in the history of humanity and that remained isolated to a large extent for a long time, so there is the possibility that this motif was carried with the first expansion of *Homo sapiens* out of Africa. Because motif C5A was only retained for analysis in the context of the flood, this expansion may provides potential evidence for a flood myth before the out-of-Africa process.

Two out of three motifs reconstructed by rooting the tree in Central Asia are also found in African rooting, and one out of three motifs is also in Southeast Asian rooting. This position seems to situate Central Asia in an intermediate rather than an original position for the respective motifs. A probable origin for the majority of the diluvian motifs would therefore seem to be Southeast Asia.

The tree exhibits some large clusters. The first cluster groups the areas of Southeast Asia and Oceania and the areas of South America. This clade may be explained by a first human migration (which may have been double) to the New World from Southeast Asia. The peoples of this earliest migration eventually pushed south and became the ancestors of South American populations, among whom traces of correspondingly ancient mythology are found. A second cluster groups together the Eurasian and essentially North American areas. This cluster can thus be correlated with a second migration coming from further north in Eurasia. This migration seems to have driven earlier inhabitants south or assimilated them to become the dominant cultures across most of North America. Moreover, the tree reveals an independent development within Eurasia and one or more migrations back to Africa. These results are consistent with those of many other comparative mythology studies. However, it should be remembered that the results only reflect trends.

The motifs reconstructed at the root of the tree will be discussed below.

Study 2: *De l'Art de remonter au deluge* (2018)

In order to control the structure of the tree in Study 1, I used a recent edition of chapter five of James Frazer's *Folk-Lore in the Old Testament* (1918). In the book's index (excluding proper names), 39 significant terms referring to at least two of the author's major geographical areas were selected. In addition, the chapter of the book entitled "Other European Versions" was excluded from the analysis, because its limits were not well defined. A binary database was then created by coding the presence of a term with 1 and its absence with 0. Two trees were built using the *Puzzling Quartet* method and the heuristic method (based on likelihood) using *PAUP* 4.0a14. The first tree was rooted in the Australian area, whose native population has remained largely isolated from the rest of humanity. The second tree was rooted on the clade formed by New Guinea, Australia, Polynesia and Micronesia. Both trees show an initial spread from Southeast Asia to South America, and a second migration from a more northerly area of Eurasia to North and Central America. A back-to-Africa migration is also identifiable. The structure of the trees therefore corroborates that of Study 1, as long as one agrees with the tree's root.

The coding method proposed in this study was based on the presence or absence of key concepts in the narration of certain myths, correlated with terms in an index. The index was compiled independently (and indeed a century before) the analysis, which avoided the problem of subjectively determining the data set with the current aims of phylogenetic analysis in focus; any subjective bias in compiling the index was independent of the current study.

A methodological issue was that the reconstructed traits are purely formal and do not allow for the reconstruction of meaning, since words provide meaning only in accordance to their context (which this method cannot take into account). This produces a great risk of reconstructing mythologies as closer to one another based solely on a common set of basic concepts reduced to an index's vocabulary. This coding method could therefore only be complementary to others. Developments of this method are nevertheless possible: for each version of a myth or for each set of myths

belonging to the same cultural area, it is possible to statistically establish the nouns, verbs and adjectives most frequent in a corpus (e.g. d'Huy 2014a–b) and, following the method proposed here, to construct a phylogeny on that basis.

Study 3: *Un récit de plongeon cosmogonique au Paléolithique supérieur?* (2017b)

Study 3 was based on the entire catastrophes section of Berezkin's database. Only the ethno-linguistic groups (a) that were listed with at least two motifs in common with others, and (b) whose geographical distance from a point of African origin was given by Joaquim Fort and Joaquim Pérez Pérez-Losada (2016) were used. The results were then tested by selecting those groups with at least five, and then seven, motifs. For each database, Jaccard's distance was calculated between the particular group and that geographically closest to Africa (no mythology with more than two motifs in common with other mythologies could be retained in Africa). Then the results were compared to the geographical distance separating each linguistic group from Africa as given by Fort and Pérez-Losada (2016), with linear and Spearman regressions to model the relationship between the two parameters.

The distance from an African origin explains between 7.43% and 32.09% of the variation in the mythological diversity (only $p < 0.05$ values were retained here): the variability depends on different factors such as the size of the database or the suppression of certain peoples. Geographic distance alone (Mantel test) explains between 4.62 and 50.55% ($p < 0.05$) of the variability. When the p -value is significant enough to compare results, the influence of distance from Africa is always >50% of the total influence of the geographic distance.

The correlation increases significantly when only mythologies with a higher number of motifs are retained in analysis between the distance from an African origin and the variation in the mythological diversity. These mythologies are mainly located in northern Eurasia and North America, and this increase suggests a second Paleolithic mythological spread from northern Eurasia to North America via Northeast Asia.

Table 1. Motifs reconstructed to different roots on the tree using the parsimony and the maximum likelihood methods. S1 = Study 1; S3 = Study 3; + = corroborating research; motifs are listed according to Berezkin & Duvakin, n.d.

Motif	Southeast Asia	North Eurasia	North America	South America
C4	S1			S1
C6D		S3 +	S3 +	
C6C		S3 +	S3 +	
C6A			S3	
C2	S1		S1, S3	S1
C34	S1 +			S1 +
C5A			S1	
C8			S1	
C19		S3 +		
C32		S3		

- C4: The flood: fruits fall from a tree. *During the flood or in the beginning of times fruits, seeds or other objects are dropped into water one by one, usually by a person who has climbed a tree; as far as the objects fall, water recedes and the dry land appears*
Corroboration: *Proximity between Oceanian and South American versions of the myth (d’Huy 2020a: 155–157).*
- C6D: The earth-diver. *Persons or creatures get from the bottom of the ocean or from the lower world small amount of solid substance which turns into the earth.*
Corroboration: *Paleolithic origin of the Earth diver and constation of a diffusion from north Eurasia to north America (Charencey 1894; Dähnhardt 1907; Rooth 1957: 99; Berezkin 2007; Napolskikh 1991; 2012; Witzel 2012: 116–117; Le Quellec 2014; 2021; d’Huy 2020a: 111–158).*
- C6C: The diver is a bird. *An aquatic bird brings the desired object from under the water.*
Corroboration = corroboration for Motif C6D.
- C6A: The diver is turtle or frog. *A turtle, a frog, a toad, or an armadillo brings the desired object from the bottom of the water body or from the lower world.*
- C2: Deluge and conflagration combined. *World is destroyed once with fire or draught, another time with a flood or it is destroyed with a flood of fire or boiling water.*
- C34: Killing (injuring, offending) of some creature (usually related to water) triggers deluge.
Corroboration: *Very ancient stratum of the mythology: Witzel 2012: 353.*
- C5A: Bird-scouts. *Birds or humans later changed to birds are sent to explore the earth (is it dry, are any survivals, to investigate why smoke rises to the sky, etc.) or to bring some soil to make the land that would be good for living.*
- C8: The primeval couple of siblings. *In the beginning of time or after the world catastrophe brother and sister or mother and son are the only humans. They marry each other and the present day people descend from them.*
- C19: Acquisition of the sun. *The primeval ancestors acquire with difficulty the hidden or stolen sun or daylight.*
Corroboration: *Paleolithic origin and presence of the motif in Eurasia and North America (Witzel 2012: 139–147; d’Huy 2020a: 182–191; on the possible transformation of the motif of the theft of fire, which is probably antedates the out of Africa migration, see d’Huy 2017c).*
- C32: Beware of cut off nails. *The cut off nails (and hair) have special significance for the fate of the soul in the beyond or for the future of the entire world.*

Many phylogenetic trees were built from the database with at least seven motifs per group, built with different methods (UPGMA, bio Neighbor-Joining, heuristic research based on the parsimony criterion, using the *PAUP* 4.0a14 software). The median rooting of these trees shows an origin in the Balkans or at least in Southwest Eurasia (depending on the method, the groups located at the base of the tree were, with UPGMA: Bulgarian / Romanian; with bio Neighbor-Joining and heuristic research using the parsimony method: Bulgarian / Romanian / Russian / Finnish, i.e. the groups closest to the African origin).

Peoples whose place fluctuated in the heuristic tree were deleted by using *PAUP* and a new tree was built. The use of *Mesquite* 2.75 software applied to the corpus preserving the 13 mythologies maximizing the phylogenetic signal made it possible to synthesize the 567 most parsimonious trees (consensus 50%) and to reconstruct the motifs located at the base of the tree by varying the rooting.

First Mythology of the Flood

Using the parsimony (d’Huy 2017a) and the maximum likelihood (d’Huy 2017a–b) methods, the mythological motifs with a probability greater than 75% have been reconstructed at different points on the tree. In Study 1, motifs

Table 2. Comparison of motif E5A: Mankind ascends from the underworld with motifs C6D: Earth-diver and C4: The flood: fruits fall from a tree.

E5A: Mankind ascends	C6D: Earth-diver	C4: Fruits fall from a tree
Vertical movement	Vertical movement	Vertical movement
From bottom to top	Pendulum	From top to bottom
Life comes from below	Life comes from above	Life comes from above
Empty world	Empty world	Empty world
Awaiting settlement	Awaiting viability	Awaiting viability
The Earth must give in	The Earth must hold	The Earth must hold
Emergence of living beings	Emergence of an element	Emergence of an element
Multiplication of living beings	Multiplication of the element	Multiplication of the element

were reconstructed at the level of the root (Southeast Asia: Melanesia, Malaysia/ Indonesia), at the node uniting the Eurasian and North American areas and both at the nodes clustering the Melanesia/Malaysia areas and the node clustering South American areas. In Study 3, which focuses on the ‘northern’ migration of humanity, the motifs retained are those identified at the root of the tree (according to four different roots) and, for diffusion in America, with a probability higher than 60% both at the Evenks node and at the node uniting all the Amerindian groups. The reconstruction of the first Amerindian motifs is, however, less reliable, given the small number of groups considered. The results obtained are shown in Table 1.

The results correspond to a double diffusion into the Americas, highlighted by numerous studies in comparative mythology.¹ The first diffusion would have reached both North and South America, but this mythology would have survived centrally in the southern hemisphere. The second migration superseded the first one in the northern hemisphere.

The main core of tradition of the flood would have emerged in the southern hemisphere, more precisely in Southeast Asia and later diffused into Eurasia and the Americas. If the myth of the earth-diver existed from the beginning of human expansion into North Eurasia, it was probably not yet linked to the cause of the flood and was instead linked to a primordial ocean (Witzel 2012; Le Quellec & Sergent 2017: 1051; d’Huy 2020a: 152). The connection between the earth-diver and the flood would have been established later – and on an *ad hoc* basis – in Eurasia and North America.

Comparison of the motifs C6D: *Earth-diver* and C4: *The flood: fruits fall from a tree* reconstructed to the Southeast Asian root, with motif E5A: *Mankind ascends from the*

underworld indicates that the former motifs are transformations of the latter. Motif E5A is described as:

First people (or only first men or first women) are not created but come to earth from the underworld or from a small enclosure under the earth or on its surface (tree trunk, rock, gourd, etc.). Many people of both sexes and of different age or people and different species of animals come out together. (Berezkin & Duvakin, n.d.: E5A.)

In these types of tales, only the rupture of an occlusion due to a membrane (earth / water) will allow the appearance of life. In addition, there is an inversion between the contents (animals and humans dwelling under the earth) and the container (the earth).

The presence of the earth-diver motif at the root of the North Asian diffusion and the presence of *Fruits fall from a tree* at the root of the diffusion from Southeast Asia suggest a common transformation shortly after the Out of Africa process. In Study 1, the absence of the earth-diver from the reconstruction during the diffusion of myths in North America is explained by the methodological choices that presided over the analysis: motifs unrelated to the flood were excluded, which included *Earth-diver* as connected instead to the primordial ocean. Moreover, the link between *Earth-diver* and the flood seems late and not permanent.

Motif C2: *Deluge and conflagration combined* seems to have spread to both Americas in a first wave of settlement, since it is reconstructed at the root of both the North and South American clades. Significantly, the ekpyrosis is very rare in Africa (Le Quellec & Sergent 2017: 418–421; Le Quellec 2021: 218), suggesting an appearance of the motif after the out-of-Africa migration. Study 3

reconstructs only this motif during the passage in North America, yet, given the structure of the tree, it is not possible to determine whether the diffusion of the motif in North America is a relic of the first migration or of a second migration that would have taken up the theme from pre-existing Siberian populations before diffusing it, again, in North America.

Motif C34: “Killing (injuring, offending) of some creature (usually related to water) triggers deluge” was reconstructed in Southeast Asia. It could be related to two motifs reconstructed before the out-of-Africa migration: *Mythological snakes keep water points, releasing water only under certain conditions* and *Mythological snakes can produce rain and/or storm* (see d’Huy 2013; 2016; 2020b; analyses based on three different corpora). According to Michael Witzel, this diluvian motif belongs to a very ancient stratum of mythology (Witzel 2012: 353).

Motif C8: *The primeval couple of siblings* was reconstructed only in Study 1, identified with the settlement of North America, so reconstruction of the motif is less reliable.

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Notes

1. See e.g. Witzel 2012; Berezkin 2007; 2013; Le Quellec 2014; 2015; d’Huy 2016; 2017c; 2020a; d’Huy & Berezkin 2017.

Works Cited

- Baumann, Hermann. 1936. *Schöpfung und Urzeit des Menschen im Mythos der afrikanischen Völker*. Berlin: Verlag von Dietrich Reimer.
- Berezkin, Yuri E. 2007. “‘Earth-Diver’ and ‘Emergence from under the Earth’: Cosmogonic Tales as Evidence in Favor of the Heterogenic Origins of the American Indians”. *Archaeology, Ethnology and Anthropology of Eurasia* 32(1): 110–123.
- Berezkin, Yuri E. 2013. *Африка, миграции, мифология. Ареалы распространения фольклорных мотивов в исторической перспективе*. Kunstkamera Petropolitana. СПб.: Наука.
- Berezkin, Yuri E., & E.N. Duvakin. N.d. “World Mythology and Folklore: Thematic Classification and Areal Distribution of Motifs: Analytical Catalogue”. Available at: <http://ruthenia.ru/folklore/berezkin>.
- van Binsbergen, Wim. 2007. “Transcontinental Mythological Patterns in Prehistory: A Multivariate Contents Analysis of Flood Myths Worldwide Challenges Oppenheimer’s Claim that the Core Mythologies of

- the Ancient Near East and the Bible Originate from Early Holocene South East Asia”. *Cosmos: Journal of Traditional Cosmology* 23: 29–80.
- de Charencey, Charles Félix Hyacinthe. 1894. *Le Folklore dans les deux mondes*. Paris: Librairie C. Klincksieck.
- Dähnhardt, Oscar. 1907. *Natursagen: Eine Sammlung naturdeutender Sagen, Marchen, Fabeln und Legenden*, I. Leipzig / Berlin: B.G. Teubner.
- Fort, Joaquim, & Joaquim Pérez-Losada. 2016. “Can a Linguistic Serial Founder Effect Originating in Africa Explain the Worldwide Phonemic Cline?”. *Journal of The Royal Society Interface* 13(117):20160185).
- Frazer, James. 1918. *Folk-Lore in the Old Testament*. London: MacMillan & Co.
- Hatt, Gudmund. 1949. *Asiatic Influences in American Folklore*. Det Kongelige Danske Videnskabernes Selskabs skrifter, Historisk Filologiske Meddelelser. København: Ejnar Munksgaard.
- d’Huy, Julien. 2013. “Le motif du dragon serait paléolithique: Mythologie et archéologie”. *Préhistoire du Sud-Ouest* 21(2): 195–215.
- d’Huy, Julien. 2014a. “Recueils de contes et nuages de mots”. *Mythologie française* 255: 14–18.
- d’Huy, Julien. 2014b. “Motifs and Folktales: A New Statistical Approach”. *RMN Newsletter* 8: 13–29.
- d’Huy, Julien. 2016. “Première reconstruction statistique d’un rituel paléolithique: Autour du motif du dragon”. *Nouvelle Mythologie Comparée – New Comparative Mythology* 3: 15–47.
- d’Huy, Julien. 2017a. “Entre Ciel et Terre: Reconstruction d’une mythologie paléolithique”. *Mythologie française* 267: 4–9.
- d’Huy, Julien. 2017b. “Un récit de plongeon cosmogonique au Paléolithique supérieur?”. *Préhistoire du Sud-Ouest* 25(1): 109–117.
- d’Huy, Julien. 2017c. “Matriarchy and Prehistory: A Statistical Method for Testing an Old Theory”. *Les Cahiers de l’AARS* 19: 159–170.
- d’Huy, Julien. 2020a. *Cosmogonies: La Préhistoire des mythes*. Paris: La Découverte.
- d’Huy, Julien. 2020b. “Première mythologie du serpent et art rupestre saharien”. *Les Cahiers de l’AARS* 21: 135–144.
- d’Huy, Julien, & Yuri E. Berezkin. 2017. “How Did the First Humans Perceive the Starry Night? – On the Pleiades”. *RMN Newsletter* 12–13: 100–122.
- Le Quellec, Jean-Liöc. 2014. “Une chrono-stratigraphie des mythes de creation”. *Eurasie* 23: 51–72.
- Le Quellec, Jean-Liöc. 2015. “Peut-on retrouver les mythes préhistoriques? – L’exemple des récits anthropogoniques”. *Bulletin de l’Académie des Inscriptions et Belles Lettres* 1: 235–260.
- Le Quellec, Jean-Loïc. 2021. *Avant nous le Déluge! L’humanité et ses mythes*. Paris: Éditions du Détour.
- Le Quellec, Jean-Loïc, & Bernard Sergent. 2017. *Dictionnaire critique de mythologie*. Paris: CNRS Éditions.
- Müller, Werner. 1930. *Die ältesten amerikanischen Sintfluterzählungen*. Bonn: Hch. Ludwig, Spezialdruckerei für Dissertationen.

- Napolskikh, Vladimir V. 1991. *Древнейшие этапы происхождения народов уральской языковой семьи: данные мифологической реконструкции (прауральский космогонический миф)*. Материалы к серии “Народы СССР” 5. Москва: Народы уральской языковой семьи.
- Napolskikh, Vladimir. 2012 “The Earth-Diver Myth (A812) in Northern Eurasia and North America: Twenty Years Later”. In *Mythic Discourses: Studies in Uralic Traditions*. Ed. Frog, Anna-Leena Siikala & Eila Stepanova. Studia Fennica Folkloristica 20. Helsinki: Finnish Literature Society. Pp. 120–140.
- Oppenheimer, Stephen. 1998. *Eden in the East: The Drowned Continent of Southeast Asia*. London: Phoenix.
- Paulme, Denise. 1986 *La Mère dévorante: Essai sur la morphologie des contes africains*. Paris: Gallimard.
- Rooth, Anna-Birgitta. 1957. “The Creation Myths of the North American Indians”. *Anthropos* 52(3–4): 497–508.
- Witzel, E.J. Michael. 2012. *The Origins of the World's Mythologies*. Oxford / New York: Oxford University Press.

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