

Folklore

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What we Would Like to Know

1. Beliefs and attitudes of pre-industrial societies

Ideal Data

- ▶ World Values Surveys of Pre-Industrial Societies

Ideal Data

- ▶ World Values Surveys of Pre-Industrial Societies
 - ▶ not there yet

What we Would Like to Know

2. Economic and social characteristics of pre-industrial societies

Current State of Affairs

- ▶ Ethnographic Atlas (EA)

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 - ▶ an additional proxy would reduce measurement error
 - ▶ recover groups not covered by the EA
 - ▶ reconstruct traits not coded by the EA

An Unexplored Discipline

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 - ▶ Leverage the oral tradition of a group: **Folklore**.
 - ▶ On the rising importance of narratives, see Shiller's Presidential address at the AEA Meetings, 2017 on "Narrative Economics",
 - ▶ See also Benabou, Falk, Tirole (2018)

Folklore as a Window into our Past

- ▶ **Folklore** is the collection of fictional stories, myths, jokes, proverbs, songs, tales, quotes, forms and rituals of celebrations, folk dances and initiation rites.
 - ▶ It is a description of culture, which is passed along informally from one individual to another either through verbal instruction or demonstration.

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 - ▶ It is a description of culture, which is passed along informally from one individual to another either through verbal instruction or demonstration.
 - ▶ Folklore is usually not part of the school curriculum or studied in the fine arts

Folklore the Academic Field

- ▶ Folklore studies is also an academic discipline
 - ▶ is the field of scholarship devoted to the documentation, classification, and interpretation of folklore and folklife.
 - ▶ It is a hybrid, straddling humanities and social sciences.

Folklore the Academic Field

- ▶ A brief history of the field
 - ▶ Folklore studies began in the early 19th century focusing on peasants. Folklorists' aim was to document archaic customs and beliefs and trace them to their remote origins.
 - ▶ Inspired by the Grimm Brothers, whose first collection of fairy tales appeared in 1812, scholars all over Europe began recording and publishing oral literature of many genres. Large collections were amassed over the course of the century.

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 - ▶ Inspired by the Grimm Brothers, whose first collection of fairy tales appeared in 1812, scholars all over Europe began recording and publishing oral literature of many genres. Large collections were amassed over the course of the century.
- ▶ An important advance in the early 20th century was the classification of material for comparative analysis.

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- ▶ Late 20th century folklorists, influenced by the wave of post-modernism sweeping the humanities, largely abandon comparative work. Focus on “contextual” analysis.

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1. Introduce and describe a novel dataset of oral traditions across roughly 1,000 pre-industrial societies.
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 - 2.1 natural environment, institutional framework, and mode of subsistence
 - 2.1.1 folklore-derived features are in accordance with the ethnographic record; useful to recover traits that are not recorded in the EA.

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3.3 Importance of family for groups organized along extended family lines

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- 3.4 The diminished role of women in the labor force in plow-using societies, Boserup (1970)
- 3.5 The abundance of leisure among foraging societies, Sahlins (1972)
- 3.6 Are rule-following themes more/less prevalent in the oral tradition of politically centralized groups?

Road Map: Historical Values and Contemporary Attitudes

4. Attitudes persist because they are informally transmitted across generations. However, this is hard to empirically evaluate.

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- 4.1 folklore (group-specific narratives and images) as a vehicle of transmission of norms across generations
 - 4.1.1 Explore whether values extracted from oral traditions predict contemporary attitudes (EVS-WVS).

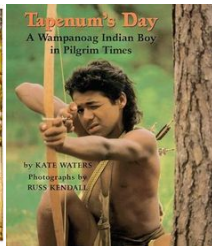
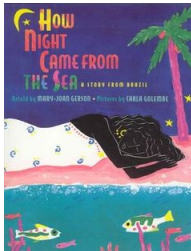
Folklore in Transmission



Folklore: Examples of Fables, Tales and Legends

- ▶ **Aesop's Fables** (The Tortoise and the Hare, etc., around 600 BCE)
- ▶ **Liaozhai Zhiyi** (Strange Tales from a Chinese Studio, 1740 AD)
- ▶ **Panchatantra** (an ancient Indian collection of interrelated animal fables, 3rd century BCE)
- ▶ **One Thousand and One Nights** (Middle Eastern and South Asian stories and folk tales compiled during the Islamic Golden Age)
- ▶ **Cinderella** (popularized in Grimms' Fairy Tales, 1812)
- ▶ **Kojiki/Furukotofumi** ("Records of Ancient Matters" oldest extant chronicle in Japan, dating from the early 8 AD).

Folklore: Examples of Fables, Tales and Legends



How Is Information from Folklore Codified?

- ▶ Folklorists classify oral traditions into motifs
- ▶ What is a motif?
 - ▶ is a recurrent image, idea or a symbol that develops or explains a tale
 - ▶ it often takes the form (actor, item, incident)
 - ▶ Note: A tale can map into multiple motifs and vice versa.

Classifying Folklore

- ▶ Two existing folklore classifications:
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 - 1.1 associated Thompson motif index
- ▶ Pros: commonly used among folklorists interested in European oral traditions
- ▶ Cons: European focus

Classifying Folklore

2. Berezkin's categorization, 2,500 motifs: available for 945 groups
 - ▶ Two broad categories
 - ▶ cosmological and etiological motifs (origin of earth, sky, moon, water, death, plants, diseases, etc.): 48.7%
 - ▶ non-cosmological (society, animal stories, adventures, tricks and competitions): 51.3%
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 - ▶ Pros: over 900 pre-industrial societies (spanning a wide spectrum of economic, societal and institutional arrangements)

Examples of Motifs in Berezkin

- ▶ Title: Task-giver is a king or a chief
 - ▶ Description: Person who gives difficult tasks to the hero is a prominent figure in social hierarchy, i.e., a head of political unit of community- or higher level and not a mythical being; 219 groups

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- ▶ Title: Earth grows big
 - ▶ Description: Original earth was small and later increased in size or the fertile soil grew from a small amount of original substance; 280 groups.

Cosmological Motifs

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- ▶ Title: The **flood** and the wet tails
 - ▶ Description: During the flood birds or animals escape to some place (mountain, tree, boat, sky). Tips of their tails or other body parts get covered with water or foam and acquire their present color and form; Count: 24

Non-Cosmological Motifs

- ▶ Title: Grazing animals to be preserved by a **herdsman**
 - ▶ Description: A man had to graze animals. If at least one is lost, the master would kill (not reward) him; Count: 27

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- ▶ Title: Expedition to the upper world
 - ▶ Description: People regularly ascend to the sky for hunting, fishing or gathering; do not give honey, fish or proper meat to the old person remained below; she or he makes their return impossible, they remain in the sky; Count: 7
- ▶ Title: Hook from the sky
 - ▶ Description: The sky dwellers fish human beings who live on earth with a line and a hook; Count: 15

Sources of Berezkin

- ▶ Berezkin utilizes a wide range of materials: 5,007 references
 - ▶ 3,338 books and 1,669 journal articles (The Folk-Lore Journal, Journal of American Folklore, Journal of Latin American Lore, Latin American Indian Literature Journal, The Journal of the Polynesian Society, Journal de la Societe des Americanistes, The Journal of the Anthropological Institute of Great Britain and Ireland, The Journal of Indo-European Studies, Journal de la Societe Finno-Ougrienne, Oral Traditions)

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 - ▶ Language of Publication:
 - ▶ English: 38%
 - ▶ Russian: 28%
 - ▶ Spanish: 9%
 - ▶ German: 7%
 - ▶ French: 6%
 - ▶ Other Languages: Breton, Quechua, Sanskrit, Tagalog, etc. (these are from translations)

Sources per Group

- ▶ The median society in Berezkin's corpus has:
 - ▶ 11 references
 - ▶ 10 authors
 - ▶ 11 publishers
 - ▶ 4 languages
 - ▶ Median publication date is 1970
 - ▶ Median date of first publication is 1900

The Laos Oral Tradition - Sources

A list of sources:

- Fleeson 1899: Laos Folk-Lore of Farther India. New York, Chicago, Toronto: Fleming H. Revell Co.
- Bourlet 1907: "Les Thay". *Anthropos* 2(6), 921-932.
- Walk 1949: "Das Flut-Geschwisterpaar als Ur- und Stammelternpaar der Menschheit. Ein Beitrag zur Mythengeschichte Süd- und Südostasiens". *Mitteilungen des Österreichischen Gesellschaft für Anthropologie, Ethnologie und Prähistorie* 78-79(1-3), 60-115.
- Archaimbault 1959: « La naissance du monde selon les traditions lao : le mythe de Khun Bulom », dans *La naissance du monde*, Paris, Seuil (Sources orientales), p. 383-416.
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- Yamada 2014: "Forager prototype or high-culture influence for Hainuwele myths?" *Route de la soie dans la mythologie*. P. 461-477.
- Terwiel, B. J. 1994: "Ahom Ritual: A Brand-New Ancient Tradition."
- http://www.hobobo.ru/catalog/narodnye_skazki_byliny_skazaniya/laosskie-skazki;

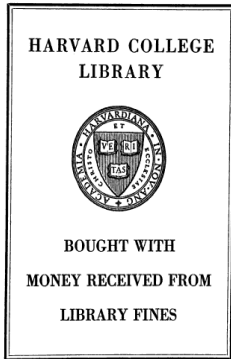
Laos Folk-Lore of Farther India

BY
Katherine Neville Fleeson

With Illustrations from Photographs taken by
W. A. Briggs, M. D.



NEW YORK CHICAGO TORONTO
Fleming H. Revell Company
Publishers of Evangelical Literature



Introduction

THESE Folk-Tales from the Laos country, a part of the kingdom of Siam, in addition to their intrinsic merit have the charm of complete novelty. Until the translator of this volume collected these stories, they were even unwritten, with a single exception which was found in a Laos manuscript. They are orally preserved in the provinces which constitute the Laos country, just as they have been handed down from generations of ancestors, with slight variations in words or incidents. The elders among the people tell the stories at their merrymakings around the camp-fires and within their primitive houses, to amuse and instruct the youth and children.

Living among the Laos in the friendly and intimate relation of a missionary, the translator has had the advantage of long residence and unrivalled opportunity for understanding the history, customs, religious ideas and aspirations of this interesting people. Aptness in use of their colloquial speech gave her special facility for gathering the stories with exactness, as they

Fleeson 1899 - Tale

In the far north country there lived a father, mother, and son. So poor and desolate were they that their only possession was an old ax. Each morning, as the eye of day opened on the earth, they went to the woods and there remained until the evening, cutting the wood, which, when sold, furnished their only source of a living.

Upon a day, when the cutting was done, they placed the ax near the wood and went deeper into the jungle for vines to bind the wood. It happened the chow of the province came that way with twelve of his men; one of whom bore an ax of gold, another bore an ax of silver and both belonged to the chow. Yet, when the chow saw the old, wooden-handled ax lying near the wood, he commanded that it be taken home with them.

The family returning found their ax gone. Deeply distressed, they sat down and wept, and

thus in trouble, did the chow and his men find them as they came that way again.

"Why are your hearts thus troubled?" inquired the chow.

They answered: "O chow, we had but one ax and it is gone and no other means of earning food have we!"

The chow replied: "I found your ax. Here it is." And he commanded they be given the ax of silver, whose handle even was silver.

"That is not ours," they cried, "not ours."

The chow commanded the ax of gold be given them. Yet they wept but the more, saying, "The golden ax is not ours. Ours was old, 'twas but of steel and the handle of wood, but 'twas all we had."

Their honesty gladdened the heart of the chow and he commanded that not only their own ax be returned, but the ax of gold, the ax of silver, and even a pun¹ of gold be given them. Thus was merit rewarded.

The Making of a Motif: Golden Ax

- ▶ Motif-ID: K56c.
 - ▶ Description: A man loses an axe. A spirit or a powerful official suggests him a golden axe but the man does not accept it. The spirit (official) gives him axes of gold and silver as a reward for his honesty. Usually another man intentionally loses his axe, claims the golden one but receives nothing.

Distribution of a Motif: Golden Ax



Caveats

- ▶ Which period these motifs correspond to?
 - ▶ A snapshot of the depository of beliefs and attitudes of pre-industrial societies in the mid 19th century
 - ▶ When did these motifs emerge? From thousands of years BP till roughly the 18th century. Timing the emergence and spread of motifs is a topic of active research (focus of Berezkin).
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 - ▶ motifs on the origin of fire (more generally etiological motifs) are considered thousands of years old
 - ▶ For each group we have a single set of motifs
 - ▶ Except for Chinese and Greeks for which we have two sets of motifs; ancient and as of 19th century.

More Caveats

- ▶ How many unique myths-legends-tales do we have per tradition?
- ▶ We do not know.
 - ▶ In Berezkin words: "You can have one book with enormous amount of data on several traditions like Potanin (1883) and you can have a dozen of publications on one tradition all of which containing something fragmentary and insignificant"

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- ▶ Our data indicates the presence/absence of a given motif

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 - ▶ Control for the year-of-first publication / # references (authors, publishers, different languages) / # motifs.
 - ▶ country-specific constants partially account for sampling differences (under the assumption that groups in the same country were sampled around the same time period, with similar methods, biases etc.)

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 - ▶ country-specific constants partially account for sampling differences (under the assumption that groups in the same country were sampled around the same time period, with similar methods, biases etc.)
- ▶ Meta-analysis of oral traditions is done by a single author, Berezkin
 - ▶ similar to Murdock's Ethnographic Atlas

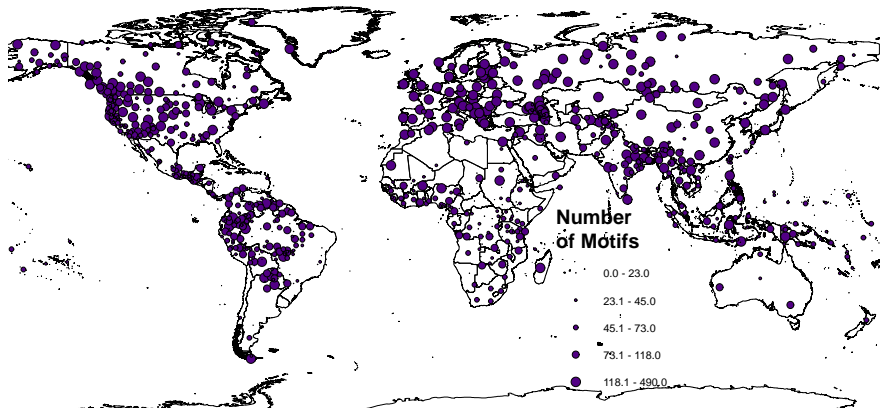
Motifs in Berezkin

- ▶ Median tradition has 59 motifs; Russians have the max # of motifs: 563
 - ▶ Top 10 groups in terms of motifs: Russians, Ukrainians, Bulgarians, Georgians, Lithuanians, Kazakh, Latvians, Germans/Austrians/Alsations, Greeks, Finns

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- ▶ The number of motifs per group reflects both the number of underlying sources and the number of motifs per tale.
 - ▶ We cannot disentangle between the two but will control for.

Motifs per Group



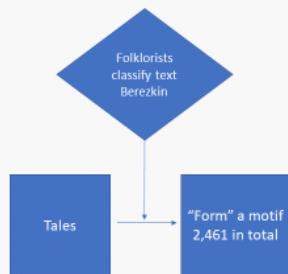
Classifying Motifs

- ▶ Goal is to get a measure of traits from the oral tradition of a group.
How do we classify motifs?
- ▶ Text analysis:
 - ▶ search over titles and descriptions of the motifs for predetermined Bags of Words (BoWs).
 - ▶ If this specific word(s) is found then classify this motif accordingly.
 - ▶ some cases are simple, like find motifs mentioning "earthquake" or "eclipse".

Classifying Motifs - Content Analysis

- ▶ Use BoWs from:
 - ▶ knowledge graphs created by computer scientists
 - ▶ Conceptnet 5: semantic network created by the MIT Media Lab using crowdsourced resources (Wiktionary, DPpedia, WordNet, Open Mind Common Sense) to build a large commonsense knowledge base. Look over the 50 most related words per concept.
 - ▶ dictionaries created by social psychologists to capture people's social and psychological states
 - ▶ Linguistic Inquiry and Word Count (LIWC)
 - ▶ Moral Foundations Dictionary

Work Flow

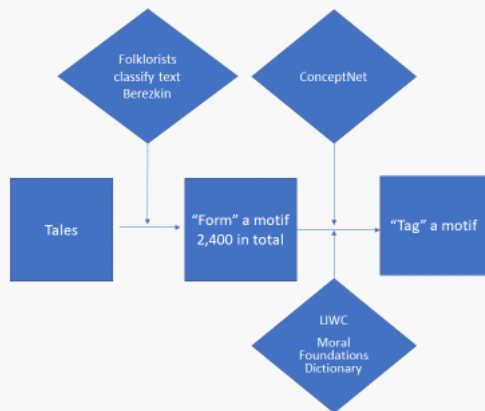


Oral Traditions

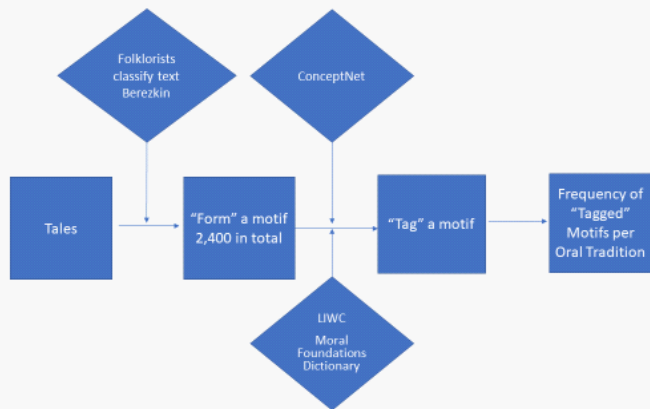
Text Analysis via bag-of-words

Contemporary Values

Work Flow



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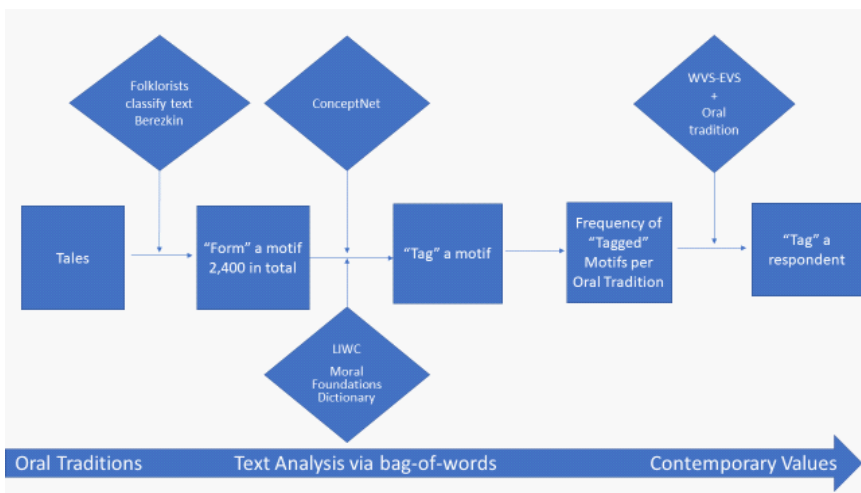


Oral Traditions

Text Analysis via bag-of-words

Contemporary Values

Work Flow



Does the Geography Predict Environment-Related Motifs?

- ▶ Is the physical environment reflected in the oral tradition of a society?
 - ▶ Berezkin's view of oral traditions as a depository of the migration history of a society suggests that folklore elements can be preserved even if the landscapes, climates and social configurations in which they are told change

Does Geography Predict Environment-Related Motifs?

$$\ln(1 + \# \text{ Topic-Specific Motifs}_i) = a_c + \beta \text{GEO}_i + \varepsilon_i$$

- ▶ $\# \text{ Topic-Specific Motifs}_i$: number of motifs that correspond to a geographic trait of group i
- ▶ GEO_i : vector of geo traits - constructed at 50km buffer
- ▶ a_c : continent/country fixed effects
- ▶ standard errors clustered at the language group level

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- ▶ Always control for:
 - ▶ $\ln(\# \text{ of motifs per oral tradition})$
 - ▶ $\ln(\text{average word length per motif})$
 - ▶ $\ln(\# \text{ of authors per group})$
 - ▶ dummies for year of first publication per group. (Date < 1900, 1900 < Date < 1950, Date > 1950)

Folklore and the Physical Environment

- ▶ **Earthquake** in the oral tradition. Search for the word "earthquake" across motifs
- ▶ Name: The dead shake the earth
 - ▶ The **earthquakes** are produced by the dead who are in the underworld or during the earthquakes the inhabitants of the lower world try to come out; Count: 19

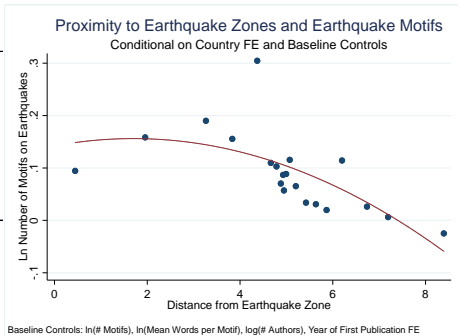
Summary Stats

Table 1: Summary Statistics—Berezkin Sample

Variable	Mean	Std. Dev.	Min.	Max.	N
# of Motifs on Earthquakes	0.103	0.341	0	3	933
# of Motifs on Fishing	2.787	3.132	0	16	933
# of Motifs on Lightning	1.221	1.492	0	8	933
# of Motifs on Floods	2.171	2.19	0	11	933
# of Motifs on Mosquitoes	1.114	1.525	0	12	933

Folklore and the Physical Environment

	Ln(1+# Motifs on Earthquakes)	
Ln(Distance to Earthquake Zones)	-0.0179*** (0.0043)	-0.0184*** (0.0043)
Baseline Controls	yes	yes
Continental FE	yes	no
Country FE	no	yes
R ²	0.075	0.097
# of Observations	942	942

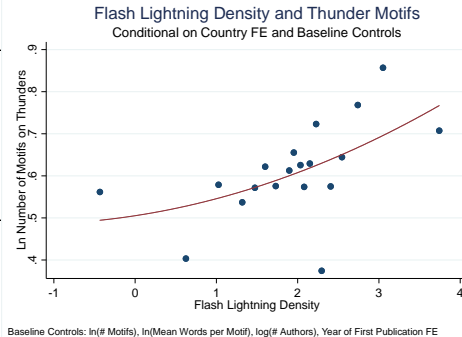


Folklore and the Physical Environment

- ▶ **Thunder** in the oral tradition. Look for "thunder" from Conceptnet
 - ▶ Words tagged across motifs: lightning, thunder, storm, thunderbolt, thunderstorm, roar
 - ▶ Motif i1: Creatures that produce rain and/or thunderstorms are birds or anthropomorphic beings with wings; or (rare) some or all birds are connected with thunder, lightning or rain.

Folklore and the Physical Environment

	Ln(1+# Motifs on Thunder)	
Ln(Mean Lightning Flash Density)	0.0349** (0.0155)	0.0455*** (0.0156)
Baseline Controls	yes	yes
Continental FE	yes	no
Country FE	no	yes
R ²	0.407	0.44
# of Observations	922	922

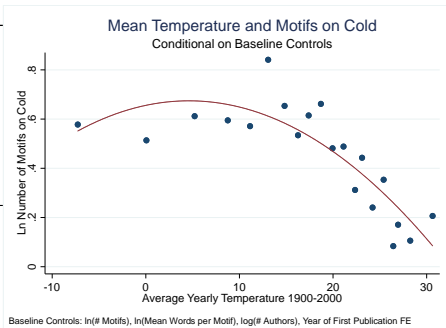


Folklore and the Physical Environment

- ▶ **Cold** in the oral tradition. Look for "insect" from Conceptnet:
 - ▶ Words tagged across motifs: cold, freeze, frozen, ice
 - ▶ Motif m35: Two animal persons compete to see who could withstand cold all the night. At dawn one is dead..

Folklore and the Physical Environment

	Ln(1+# Motifs on Cold)	
Mean Yearly Temperature 1900-2000	-0.0112*** (0.0023)	-0.0077* (0.0042)
Baseline Controls	yes	yes
Continental FE	yes	no
Country FE	no	yes
R ²	0.407	0.44
# of Observations	922	922



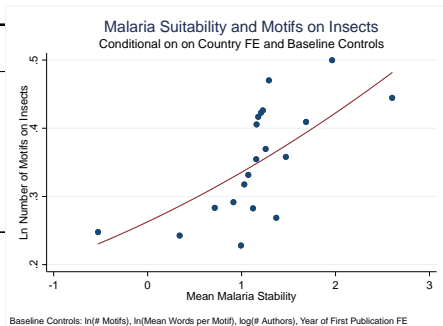
Folklore and the Physical Environment

- ▶ **Insects** in the oral tradition. Look for "insect" from Conceptnet:
 - ▶ Words tagged across motifs: insect, ant, moth, beetle, mosquito
 - ▶ Motif h27: Stinging insects (rare diseases) had been inside a container or some enclosure. They escaped to the world when the container or enclosure was foolishly opened.

Folklore and the Physical Environment

Folklore, Subsistence, and the Physical Environment

	Ln(1+# Motifs on Insects)	
Ln(Mean Malaria Stability)	0.0367** (0.0184)	0.0941*** (0.0289)
Baseline Controls	yes	yes
Continental FE	yes	no
Country FE	no	yes
R ²	0.326	0.396



Folklore and the Physical Environment

- ▶ Crops in the oral tradition. Look for "rice", "wheat", "corn" from Conceptnet
 - ▶ Words tagged across motifs: grain, cereal, wheat, corn, rice, oat, flour, maize, crop, cob
 - ▶ Motif i59: Milky Way is a trace of people who spilled on their way something related to agriculture (straw, chaff, hay, flour, peas)

Folklore and the Physical Environment

Folklore, Subsistence, and the Physical Environment

	Ln(1+# Motifs on Insects)		Ln(1+# Motifs on Crops)		
Ln(Mean Malaria Stability)	0.0367** (0.0184)	0.0941*** (0.0289)			
Ln(Optimal Agricultural Calories Pre-1500)			0.0207*** (0.0052)	0.0183*** (0.0067)	0.0168** (0.0070)
Change in Optimal Agricultural Calories from the Columbian Exchange					0.0106 (0.0084)
Baseline Controls	yes	yes	yes	yes	yes
Continental FE	yes	no	yes	no	yes
Country FE	no	yes	no	yes	no
R ²	0.326	0.396	0.433	0.47	0.47
# of Observations	942	942	939	939	939

Notes: This table reports OLS estimates. The unit of analysis is a group in Berezkin's catalogue. Baseline Controls include: ln(# Motifs), ln(Mean Words per Motif), log(# Authors), Year of First Publication FE (before 1900, between 1900 and 1950, after 1950). Standard errors are clustered at the language family level as classified by Berezkin. ***, **, * denote significance at 1%, 5% and 10%, respectively. See Data Appendix for variables definition's and Table 1A for summary statistics.

Ethnographic Record Meets Oral Traditions

- ▶ Do the motifs describe an economy/society consistent with the ethnographic record (link Berezkin to Murdock)?

$$Trait_i = a_c + \beta \ln(\text{Topic-Specific Motifs}_i) + \varepsilon_i$$

- ▶ *Topic-Specific Motifs_i* : number of motifs that correspond to trait *i*
- ▶ *Trait_i* : share of subsistence from different modes of production, political complexity, etc.
- ▶ a_c :continent/country fixed effects; standard errors clustered at the language family level
 - ▶ Always control for:
 - ▶ $\ln(\# \text{ of motifs per group})$
 - ▶ $\ln(\text{average word length per motif})$
 - ▶ $\ln(\# \text{ of authors per group})$
 - ▶ dummies for year of first publication per group. (Date ≤ 1900 , $1900 < \text{Date} < 1950$, Date > 1950)

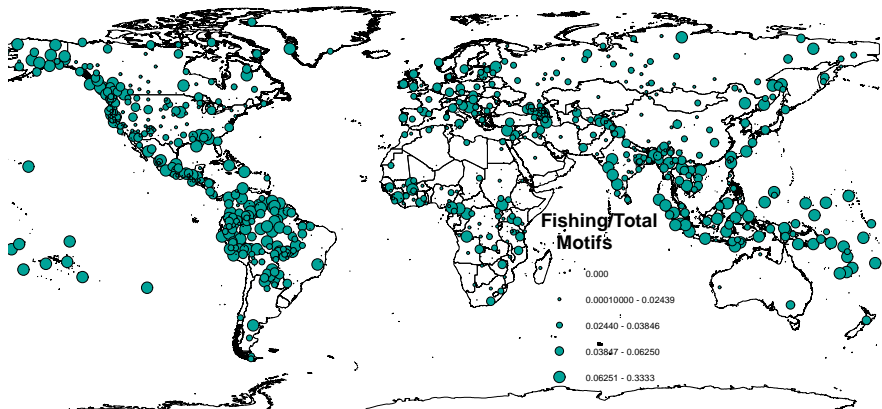
Ethnographic Record Meets Oral Traditions: Subsistence

- ▶ Can the subsistence economy be gleaned from the frequency of farming / pastoral / hunting-fishing-gathering motifs?

Fishing in the Oral Tradition

- ▶ Fishing in the oral tradition. Look for "**fish**" from Conceptnet:
 - ▶ Words tagged across motifs: fisherman, fish.
 - ▶ Motif m19: Person ties another one to a fishing line to use him as a bait or orders the tied one to catch fish with his hands

Fishing Motifs per Group



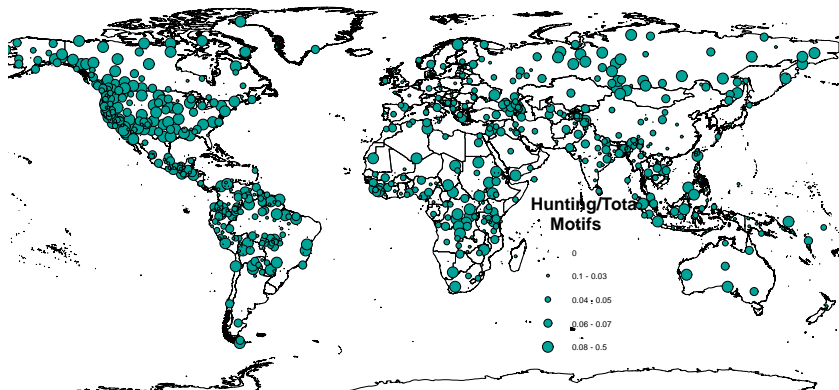
Pastoralism and Hunting in the Oral Tradition

- ▶ Pastoral activities in the oral tradition. Look for "**pastoralism**" from Conceptnet:
 - ▶ Words tagged: "cattle" "graze" "herdsman" "pasture" "herd" "herdsman" "pasture" "livestock" "agriculture"
 - ▶ motif m150: An animal person becomes a herdsman but eats the entrusted animals up

Pastoralism and Hunting in the Oral Tradition

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 - ▶ Words tagged: "cattle" "graze" "herdsman" "pasture" "herd" "herdsman" "pasture" "livestock" "agriculture"
 - ▶ motif m150: An animal person becomes a herdsman but eats the entrusted animals up
- ▶ Hunting in the oral tradition: Look for "**hunt**" from Conceptnet:
 - ▶ Words tagged: "hunt" "seek" "search" "fowl" "deer" "elk" "moose" "chase" "pursuit" "scavenger" "seek"
 - ▶ motif b42: Certain stars or constellations are interpreted as hunters, their dogs and game that the hunters pursue

Hunting Motifs per Group



Summary Stats

Table 1b: Summary Statistics—EA Matched Sample

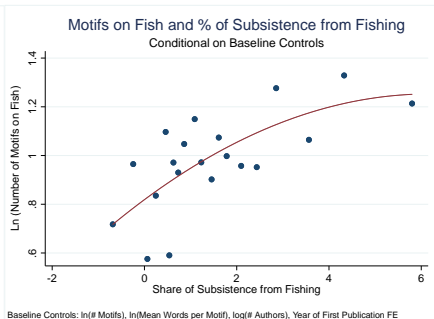
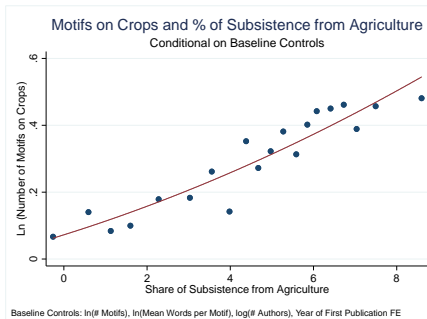
Variable	Mean	Std. Dev.	Min.	Max.	N
# of Motifs on Farming	1.776	2.648	0	22	1234
# of Motifs on Hunting/Gathering/Fishing	8.202	7.53	0	49	1234
# of Motifs on Pastoralism	2.453	4.850	0	38	1234
# of Motifs on Fishing	2.419	2.809	0	16	1234
# of Motifs on Hunting	3.519	3.834	0	23	1234
# of Motifs on Gathering	1.523	1.651	0	12	1234
# of Motifs on Authority	2.023	3.666	0	26	1234
# of Motifs on Trade and Exchange	1.465	3.184	0	24	1234
Motifs on Trade and Exchange (0/1)	0.457	0.498	0	1	1234
# of Motifs on Revenge	0.797	1.147	0	6	1234
Log(1st PC of Motifs on Authority)	0	1.565	-1.438	6.005	1234
Log(1st PC of Trickster Motifs)	0	1.691	-3.96	4.14	1234
Log(1st PC of Motifs Trickster Successful)	0	1.655	-3.059	4.672	1234
Log(1st PC of Motifs Trickster Unsuccessful)	0	1.517	-1.699	5.064	1234
Log(1st PC of Motifs Trickster Neutral)	0	1.637	-3.183	3.866	1234

Ethnographers Meet Folklorists: Subsistence

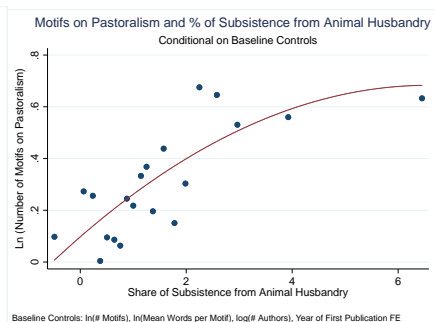
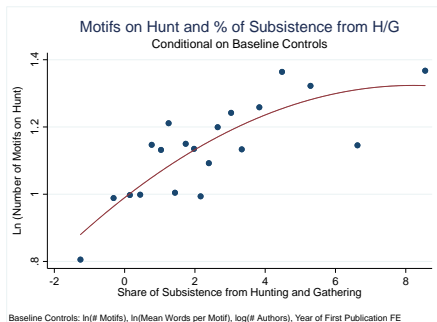
Share of Subsistence from:	<u>Farming</u>		<u>Animal Husbandry</u>		<u>Fishing</u>		<u>Hunting</u>	
Ln(Farming Motifs + 1)	1.5715*** (0.2680)	1.0665*** (0.1815)	0.3032*** (0.1006)	0.0578 (0.1394)	-0.5978*** (0.1547)	-0.4372*** (0.1465)	-1.2601*** (0.2176)	-0.6787*** (0.1947)
Ln(Pastoralism Motifs + 1)	-0.0281 (0.1839)	-0.1495 (0.2047)	0.7384*** (0.1474)	0.5882*** (0.0828)	-0.2180** (0.0993)	-0.0806 (0.1566)	-0.5115** (0.2297)	-0.3745** (0.1548)
Ln(Fish-Related Motifs + 1)	-0.1326 (0.1816)	-0.2061 (0.2128)	-0.2214*** (0.0776)	-0.1394 (0.0960)	0.6377*** (0.1487)	0.6640*** (0.1459)	-0.2893 (0.2423)	-0.3259 (0.2398)
Ln(Hunt-Related Motifs + 1)	-1.0727*** (0.2507)	-0.4012** (0.1788)	0.3608** (0.1709)	0.2378* (0.1199)	-0.0434 (0.1238)	-0.2259** (0.1042)	0.7544*** (0.2081)	0.3949*** (0.1438)
Baseline Controls	yes	yes	yes	yes	yes	yes	yes	yes
Continental FE	yes	no	yes	no	yes	no	yes	no
Country FE	no	yes	no	yes	no	yes	no	yes
R ²	0.419	0.552	0.446	0.589	0.284	0.371	0.53	0.632
# of Observations	1237	1237	1237	1237	1237	1237	1237	1237

EA has been matched to a society in Berezkin's catalogue. Baseline Controls include: Ln(# Motifs), Ln(Mean Words per Motif), log(# Authors), Year of First Publication FE (before 1900, between 1900 and 1950, after 1950). Standard errors are clustered at the language family level as classified in the EA, v98. ***, **, * denote significance at 1%, 5% and 10%, respectively. See Data Appendix for variables definition's.

Ethnographers Meet Folklorists: Subsistence



Ethnographers Meet Folklorists: Subsistence

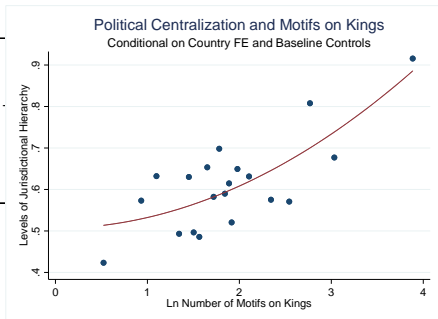


Ethnographers Meet Folklorists: Institutions

- ▶ Are centralized societies more likely to have motifs where a king is mentioned?
 - ▶ Authority in the oral tradition: Look for "**king**" in Conceptnet
 - ▶ Words tagged: "king", "queen", "ruler", "prince", "princess" "rein"
 - ▶ Societies in the EA organized as states have on average is 4 such motifs whereas acephalous ones have 1.

Ethnographers Meet Folklorists: Institutions

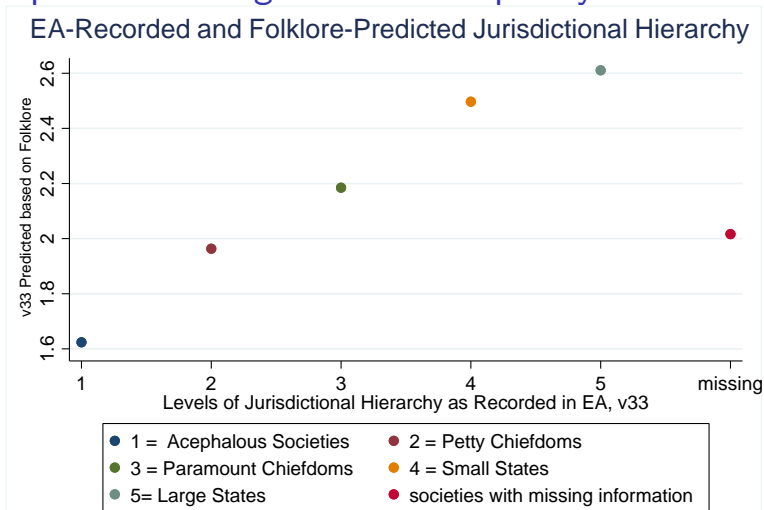
	Levels of Jurisdictional Hierarchy Beyond the Village	
Ln(King-Related Motifs)	0.1529*** (0.0391)	0.1109*** (0.0341)
Baseline Controls	yes	yes
Continental FE	yes	no
Country FE	no	yes
R ²	0.589	0.684
# of Observations	1108	1108



Populationg Missing Values in the EA from Folklore

- ▶ The EA has incomplete group-coverage for a variety of measures
 - ▶ the political hierarchy variable, for example, is missing for 11% of the 1265 EA societies
 - ▶ Idea: use folklore-predicted level of hierarchy to uncover the degree of hierarchy for those EA societies with missing info.

Groups with Missing Political Complexity?



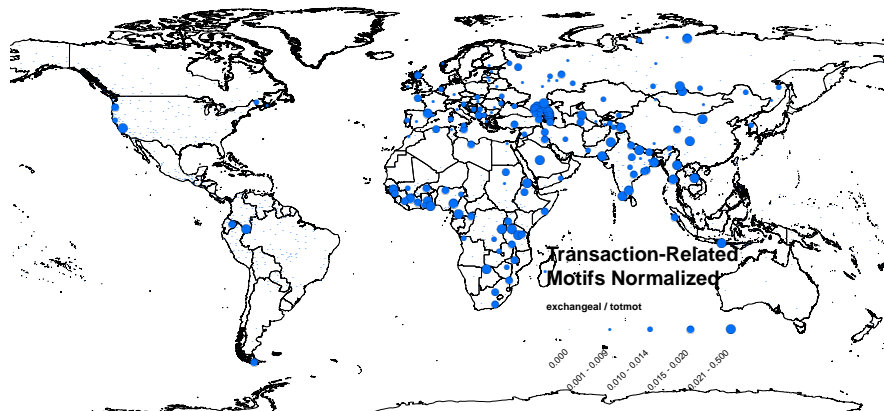
Uncovering the Intensity of Trade from Folklore

- ▶ EA has a wide coverage of groups but omits altogether coding of various traits including the degree of trade

Uncovering the Intensity of Trade from Folklore

- ▶ EA has a wide coverage of groups but omits altogether coding of various traits including the degree of trade
- ▶ Trade in the oral tradition: Look for "**trade**" from Conceptnet
 - ▶ Words tagged: "trade", "barter", "broke", "swap", "deal", "exchange"
 - ▶ Description: the profitable exchange: from a pea to a horse: Count 111

Exchange Economy in Folklore



Exchange Economy in Folklore

- ▶ Is there a way to verify whether this "trade" measure from folklore correlates with some auxiliary proxy of trade?
 - ▶ Use data on pre-600 AD trade routes compiled by Michalopoulos et al (2018) in the Old World.
 - ▶ Roman roads, old ports, trade routes for a variety of historical atlases.

Exchange in Folklore and Ancient Trade Routes

	Levels of Jurisdictional Hierarchy Beyond the Village		Ln(1+# Motifs on Trade)		
Ln(King-Related Motifs)	0.1529*** (0.0391)	0.1109*** (0.0341)			
Ln(Distance to Pre-600AD Trade Routes)			-0.0650*** (0.0137)	-0.1090** (0.0423)	-0.1010* (0.0573)
Ln(Distance to 1700AD Trade Routes)					-0.0136 (0.0681)
Baseline Controls	yes	yes	yes	yes	yes
Continental FE	yes	no	yes	no	yes
Country FE	no	yes	no	yes	no
R ²	0.589	0.684	0.548	0.583	0.583
# of Observations	1108	1108	778	778	778

Notes: This table reports OLS estimates. The unit of analysis is a group in the Ethnographic Atlas. A group in the EA has been matched to an oral tradition in Berezkin's catalogue. Baseline Controls include: Ln(# Motifs), Ln(Mean Words per Motif), log(# Authors), Year of First Publication FE (before 1900, between 1900 and 1950, after 1950). Columns 2-5 focus on EA societies in the Old World. Standard errors are clustered at the language family level as classified in the EA, v98. ***, **, * denote significance at 1%, 5% and 10%, respectively. See Data Appendix for variables definition's.

Reconstructing Values and Traits of Historical Societies

- ▶ How to shed light on the psychological traits of historical societies?

Methodological Digression

1. We have a specific hypothesis to test.
 - 1.1 Example: hunter-gatherers' oral tradition "talks" about a specific psychological state/BoW

Methodological Digression

1. We have a specific hypothesis to test.
 - 1.1 Example: hunter-gatherers' oral tradition "talks" about a specific psychological state/BoW
2. Let the data tell what are the main psychological BoW that hunter-gatherers "talk about"
 - ▶ For either application we need to define what is the pool of potential psychological states/BoWs

Dictionaries on Psychological States

- ▶ The LIWC dictionary has been constructed by social psychologists in order to classify words into psychologically meaningful categories, see Tausczik and Pennebaker (2009).
 - ▶ 41 BoW on psychological processes.
 - ▶ Affective processes, social processes, cognitive processes, perceptual processes, drives, time orientation, relativity
 - ▶ 6 BoW on personal concerns

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 - ▶ Affective processes, social processes, cognitive processes, perceptual processes, drives, time orientation, relativity
 - ▶ 6 BoW on personal concerns
- ▶ Moral Foundations Theory has 5 dimensions of morality.
 - ▶ 1) Care/harm; virtues of kindness, gentleness, and nurturance
 - ▶ 2) Fairness/cheating: reciprocal altruism including ideas of justice, autonomy and rights.
 - ▶ 3) Loyalty/betrayal: virtues of patriotism and self-sacrifice for the group
 - ▶ 4) Authority/subversion: virtues of leadership and followership, including deference to legitimate authority and respect for traditions.
 - ▶ 5) Sanctity/degradation: disgust and contamination.

Psychological Categories in LIWC

- ▶ Affective processes
 - ▶ positive emotion
 - ▶ negative emotion
 - ▶ anger
 - ▶ sadness
 - ▶ anxiety
- ▶ social processes
 - ▶ family
 - ▶ friends
 - ▶ male referents
 - ▶ female referents

Psychological Categories in LIWC

- ▶ cognitive processes
 - ▶ insight
 - ▶ causation
 - ▶ discrepancy
 - ▶ tentative
 - ▶ certainty
 - ▶ differentiation
- ▶ perceptual processes
 - ▶ see
 - ▶ hear
 - ▶ feel

Psychological Categories in LIWC

- ▶ biological processes
 - ▶ body
 - ▶ health
 - ▶ sexual
 - ▶ ingestion
- ▶ drives
 - ▶ affiliation
 - ▶ achievement
 - ▶ power
 - ▶ reward
 - ▶ risk

Psychological Categories in LIWC

- ▶ time orientation
 - ▶ past focus
 - ▶ present focus
 - ▶ future focus
- ▶ relativity
 - ▶ motion
 - ▶ space
 - ▶ time

Psychological Categories in LIWC

- ▶ personal concerns
 - ▶ work
 - ▶ leisure
 - ▶ home
 - ▶ money
 - ▶ religion
 - ▶ death

How to Deal with Correlated Concepts/BoWs?

- ▶ Sometimes, a given BoW from LIWC/MFD reflects closely what we want to capture other times it is only loosely related.
 - ▶ If the latter, take the first principal component of related entries both from Conceptnet and LIWC/MFD

How to Deal with Correlated Concepts/BoWs?

- ▶ Sometimes, a given BoW from LIWC/MFD reflects closely what we want to capture other times it is only loosely related.
 - ▶ If the latter, take the first principal component of related entries both from Conceptnet and LIWC/MFD
- ▶ We want to estimate the association between a group characteristic and a specific BoW. But there are numerous BoWs (53 from LIWC/MFD dictionaries) that are potentially correlated.
 - ▶ We do not know what is the "right" set of controls among the numerous BoWs.
 - ▶ Take advantage of recent developments in estimating structural parameters in linear, sparse high-dimensional models with many controls.

How to Deal with Correlated Concepts/BoWs?

- ▶ Use the "post-double-selection" (PDS) methodology of Belloni et al. (various).
 - ▶ The idea is to use lasso over **all** BoW on the:
 - ▶ (1) dependent variable, y .
 - ▶ (2) BoW of interest, z .
 - ▶ Final set of control variables included in the OLS regression of y on z is the **union** of the controls selected in (1) and (2)

The Original Affluent Society Hypothesis

- ▶ The original affluent society hypothesis (Sahlins, 1972).
 - ▶ Conjecture: foragers (compared to horticulturalists and industrial workers) spend only few hours a week on food procurement enjoying significantly more leisure
- ▶ Do hunting and gathering groups feature more motifs describing leisure?

The Original Affluent Society Hypothesis

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 - ▶ Conjecture: foragers (compared to horticulturalists and industrial workers) spend only few hours a week on food procurement enjoying significantly more leisure
- ▶ Do hunting and gathering groups feature more motifs describing leisure?
 - ▶ LIWC entry: **leisure**
 - ▶ Words tagged: celebrate, dance, entertain, dream, fun, game, joke, sing, play, and relax.
 - ▶ Motifs: “Person joins dancers but then understands that these are trees or reeds moved by the wind.”
 - ▶ “Person plays throwing his eyes or his tooth up or away. Eyes or tooth first come back to eye sockets or mouth but eventually are lost”

Motifs on Leisure in Hunter-Gatherer Societies

	ln(1+ Motifs on Leisure)			
	(1)	(2)	(3)	(4)
Predominantly Hunting and Gathering Groups	0.1728*** (0.0523)	0.1629*** (0.0441)	0.1045*** (0.0385)	0.1063*** (0.0304)
Baseline Controls	yes	yes	yes	yes
Additional Controls	no	yes	no	yes
Continental FE	yes	yes	no	no
Country FE	no	no	yes	yes
# of Observations	1237	1237	1237	1237

Notes: This table reports OLS estimates. **The additional controls in columns 2, and 4 are selected by the "post-double selection" methodology of Belloni et al (2015) from the set of 52 BoW in the LIWC and MFD dictionaries (naturally the BoW on leisure is not considered). In the "post-double selection" specifications the baseline controls as well as the respective FE are partialled out first.** The unit of analysis is a group in the Ethnographic Atlas. A group in the EA has been matched to an oral tradition in Berezkin's catalogue. Baseline Controls include: ln(# Motifs), ln(Mean Words per Motif), log(# Authors), Year of First Publication FE (before 1900, between 1900 and 1950, after 1950). Standard errors are clustered at the language family level as classified in the EA, v98. ***, **, * denote significance at 1%, 5% and 10%, respectively. See Data Appendix for variables definition's.

What are the Psychological Traits of Foragers?

- ▶ Say we have no prior about what foragers "talk about" but we would like to let the data tell us which are the psychological states most predictive of foraging societies.

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- ▶ Say we have no prior about what foragers "talk about" but we would like to let the data tell us which are the psychological states most predictive of foraging societies.
- ▶ Many alternative ML techniques can be employed and each has its benefits and drawbacks.
 - ▶ lasso estimation
 - ▶ sets aggressively coefficients to 0
 - ▶ ridge estimation
 - ▶ shrinks coefficients towards 0 but does not set them to 0 as aggressively as lasso
 - ▶ random forest
 - ▶ many others

What are the Psychological Traits of Foragers?

- ▶ Using Lasso estimation that allows for clustered errors; see Belloni et al. (various) over the 53 BoW from LIWC/MFD the following psychological BoWs are most predictive of foraging societies:

Selected BoWs for Foraging Societies	Lasso	Post-est OLS
Leisure	0.0141	0.2569
Home	-0.0192	-0.1589
Money	-0.0098	-0.0274
Religion	-0.0353	-0.1410

Groups Organized along Extended-Family Lines

- ▶ A lot of research shows the importance of family ties on a variety of current outcomes, Alesina Giuliano (various), Enke (forthcoming).
 - ▶ Do groups organized along extended families feature more prominently family members in their oral tradition?

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 - ▶ Do groups organized along extended families feature more prominently family members in their oral tradition?
 - ▶ LIWC entry: **family**
 - ▶ Words tagged: "uncle", "aunt", "mother", "father", "son", "daughter", "grandfather", "sibling", etc

Extended Families and Motifs Featuring Family Members

	Ln(1+Motifs on Family)			
	(1)	(2)	(3)	(4)
Groups Organized along Extended Family Lines	0.0809*** (0.0198)	0.0402** (0.0181)	0.0847*** (0.0268)	0.0507*** (0.0188)
Baseline Controls	yes	yes	yes	yes
Additional Controls	no	yes	no	yes
Continental FE	yes	yes	no	no
Country FE	no	no	yes	yes
# of Observations	1211	1211	1211	1211

Notes: This table reports OLS estimates. **The additional controls in columns 2, and 4 are selected by the "post-double selection" methodology of Belloni et al (2015) from the set of 52 BoW in the LIWC and MFD dictionaries (the BoW on family is naturally not considered). In the "post-double selection" specifications the baseline controls as well as the respective FE are partialled out first.** The unit of analysis is a group in the Ethnographic Atlas. A group in the EA has been matched to an oral tradition in Berezkin's catalogue. Baseline Controls include: ln(# Motifs), ln(Mean Words per Motif), log(# Authors), Year of First Publication FE (before 1900, between 1900 and 1950, after 1950). Standard errors are clustered at the language family level as classified in the EA, v98. ***, **, * denote significance at 1%, 5% and 10%, respectively. See Data Appendix for variables definition's.

Pastoralists and the Culture of Violence

- ▶ Culture of honor among pastoral societies (Nisbett, Cohen, D. (1996), Hackett Fischer (1989)).
 - ▶ Conjecture: developing a reputation for violent retribution against those who stole herd animals was one way to discourage theft.

Pastoralists and the Culture of Violence

- ▶ Can folklore shed light on this?
 - ▶ Closest entry from LIWC is: **anger**
 - ▶ Words tagged: "aggressive", "assault", "attack", "revenge", "feud", "enemy", "hostile", "mad", "violent", "insult", etc

Pastoralists and the Culture of Violence

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 - ▶ Closest entry from LIWC is: **anger**
 - ▶ Words tagged: "aggressive", "assault", "attack", "revenge", "feud", "enemy", "hostile", "mad", "violent", "insult", etc
 - ▶ Use also the **retaliation** BoW from Conceptnet
 - ▶ Words tagged: "revenge", "avenge", "retaliate", "wrath", "compensate"
- ▶ get the first principal component of LIWC anger category and retaliation BoW from Conceptnet
 - ▶ Example of a retaliatory motif: "Hero avenges for the death of the (grand)father/uncle"; Count: 125

Pastoralism and Motifs on Anger and Retaliation

Pastoralism and Motifs on Violence

	First Principal Component of Anger and Retaliation			
	(1)	(2)	(3)	(4)
Predominantly Pastoral Groups	0.2343*** (0.0501)	0.1180*** (0.0396)	0.1999*** (0.0656)	0.1482*** (0.0447)
Baseline Controls	yes	yes	yes	yes
Additional Controls	no	yes	no	yes
Continental FE	yes	yes	no	no
Country FE	no	no	yes	yes
# of Observations	1237	1237	1237	1237

Notes: This table reports OLS estimates. **The additional controls in columns 2, and 4 are selected by the "post-double selection" methodology of Belloni et al (2015) from the set of 52 BoW in the LIWC and MFD dictionaries (the BoW on anger is naturally not considered). In the "post-double selection" specifications the baseline controls as well as the respective FE are partialled out first.** The unit of analysis is a group in the Ethnographic Atlas. A group in the EA has been matched to an oral tradition in Berezkin's catalogue. Baseline Controls include: $\ln(\# \text{ Motifs})$, $\ln(\text{Mean Words per Motif})$, $\log(\# \text{ Authors})$, Year of First Publication FE (before 1900, between 1900 and 1950, after 1950). Standard errors are clustered at the language family level as classified in the EA, v98. ***, **, * denote significance at 1%, 5% and 10%, respectively. See Data Appendix for variables definition's.

States and Exchange-Economy in Folklore

- ▶ Conjecture: Centralized societies are more involved in trade
 - ▶ Use the first principal component across (i) trade (from Conceptnet) and (ii) money (from LIWC)

States and the Exchange-Economy

	First Principal Component of Trade and Money					
	(1)	(2)	(3)	(4)	(5)	(6)
Levels of Jurisdictional Hierarchy	0.1625*** (0.0479)	0.1397*** (0.0419)	0.1234*** (0.0379)	0.1530*** (0.0505)	0.1453*** (0.0453)	0.1355*** (0.0424)
Share of Subsistence from Animal Husbandry			0.0539*** (0.0136)			0.0577*** (0.0120)
Share of Subsistence from Agriculture			0.0078 (0.0117)			0.0023 (0.0149)
Baseline Controls	yes	yes	yes	yes	yes	yes
Additional Controls	no	yes	yes	no	yes	yes
Continental FE	yes	yes	yes	no	no	no
Country FE	no	no	no	yes	yes	yes
# of Observations	1108	1108	1108	1108	1108	1108

Notes: This table reports OLS estimates. **The additional controls in columns 2, 3 and 5, 6 are selected by the "post-double selection" methodology of Belloni et al (2015) from the set of 52 BoW in the LIWC and MFD dictionaries (the BoW on money is naturally not considered). In the "post-double selection" specifications the baseline controls as well as the respective FE are partialled out first.** The unit of analysis is a group in the Ethnographic Atlas. A group in the EA has been matched to an oral tradition in Berezkin's catalogue. Baseline Controls include: $\ln(\# \text{ Motifs})$, $\ln(\text{Mean Words per Motif})$, $\log(\# \text{ Authors})$, Year of First Publication FE (before 1900, between 1900 and 1950, after 1950). Standard errors are clustered at the language family level as classified in the EA, v98. ***, **, * denote significance at 1%, 5% and 10%, respectively. See Data Appendix for variables definition's.

Ethnographers Meet Folklorists: The Plow

- ▶ Gender roles were shaped by the use of the plow diminishing the role of women in the workplace (Boserup, 1970).
 - ▶ Conjecture: upper body strength was necessary for using the plow effectively rendering women less productive in agriculture leading them to specialize in home production
 - ▶ Alesina et al (2013) show that women from plow-using societies work less today)

Ethnographers Meet Folklorists: The Plow

- ▶ Does the folklore of plow-using groups discourage women's labor?

Ethnographers Meet Folklorists: The Plow

- ▶ Does the folklore of plow-using groups discourage women's labor?
 - ▶ Identify motifs that are simultaneously:
 - ▶ female-related (tagged by the female BoW from LIWC),
 - ▶ labor-related (tagged by labor BoW from Conceptnet),
 - ▶ negative emotions (tagged by the negative emotions BoW from LIWC).

Ethnographers Meet Folklorists: The Plow

- ▶ Does the folklore of plow-using groups discourage women's labor?
 - ▶ Identify motifs that are simultaneously:
 - ▶ female-related (tagged by the female BoW from LIWC),
 - ▶ labor-related (tagged by labor BoW from Conceptnet),
 - ▶ negative emotions (tagged by the negative emotions BoW from LIWC).
- ▶ What motifs do we get?
 - ▶ Motif k61d: Hard work made her ugly: Young woman's husband gets to believe that she is extraordinarily industrious.. To conceal the deception, she makes him believe that because of hard work women become ugly or change into animals. The man prohibits his wife to work anymore. Count: 38

Plow Use and Motifs Depicting Women's Labor Negatively

	Ln(1+Motifs on Female Labor Depicted Negatively)			
	(1)	(2)	(3)	(4)
Presence of Plow in the EA	0.4205*** (0.0610)	0.3574*** (0.0519)	0.3192** (0.1599)	0.3276** (0.1464)
Share from Subsistence on Farming	-0.0220*** (0.0068)	-0.0172*** (0.0062)	(0.0105) (0.0084)	(0.0094) (0.0078)
Baseline Controls	yes	yes	yes	yes
Additional Controls	no	yes	no	yes
Continental FE	yes	yes	no	no
Country FE	no	no	yes	yes
# of Observations	1134	1134	1134	1134

Notes: This table reports OLS estimates. **The additional controls in columns 2, and 4 are selected by the "post-double selection" methodology of Belloni et al (2015) from the set of 53 BoW in the LIWC and MFD dictionaries. In the "post-double selection" specifications the baseline controls as well as the respective FE are partialled out first.** The unit of analysis is a group in the Ethnographic Atlas. A group in the EA has been matched to an oral tradition in Berezkin's catalogue. Baseline Controls include: ln(# Motifs), ln(Mean Words per Motif), log(# Authors), Year of First Publication FE (before 1900, between 1900 and 1950, after 1950). Standard errors are clustered at the language family level as classified in the EA, v98. ***, **, * denote significance at 1%, 5% and 10%, respectively. See Data Appendix for variables definition's.

Historical States and Rule-Following in Oral Traditions

- ▶ In politically complex pre-industrial societies are narratives revolving around rule following or around rule-breaking and defiance?
- ▶ Theoretically ambiguous
- ▶ Empirically the evidence is mixed.
 - ▶ Comparing a centralized to a non-centralized group Lowes et al (2016) (Dell et al (2017)) find that individuals from centralized groups in Congo (Vietnam) cheat more (less).

Historical States and Rule-Following in Oral Traditions

- ▶ Use the "Authority" BoW from the Moral Foundations Dictionary
 - ▶ "Authority": underlies virtues of leadership and followership, including deference to legitimate authority and respect for traditions.
 - ▶ Words tagged include "submit", "respect", "order", "authority", "status", "control", "serve", "permit" etc.

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 - ▶ Words tagged include "submit", "respect", "order", "authority", "status", "control", "serve", "permit" etc.
- ▶ Along with the "respect" BoW from Conceptnet
 - ▶ words tagged: "respect", "affect", "gratitude", "honor", "regard", "admire"

Centralized Societies and Motifs on Respect for Authority

	First Principal Component of Authority and Respect					
	(1)	(2)	(3)	(4)	(5)	(6)
					Groups with High Gods	Groups without High Gods
Levels of Jurisdictional Hierarchy	0.1764*** (0.0369)	0.0862*** (0.0258)	0.1178*** (0.0331)	0.0827*** (0.0219)	0.0698** (0.0304)	0.1112*** (0.0376)
Baseline Controls	yes	yes	yes	yes	yes	yes
Additional Controls	no	yes	no	yes	yes	yes
Continental FE	yes	yes	no	no	no	no
Country FE	no	no	yes	yes	yes	yes
# of Observations	1108	1108	1108	1108	556	158

Notes: This table reports OLS estimates. **The controls in columns 2, 4, 5, and 6 are selected by the "post-double selection" methodology of Belloni et al (2015). The additional controls set includes the 52 BoW from the LIWC and MFD dictionaries (the "authority" BoW from MFD is naturally not included). In the "post-double selection" specifications the baseline controls as well as the respective FE are partialled out first.** The unit of analysis is a group in the Ethnographic Atlas. A group in the EA has been matched to an oral tradition in Berezkin's catalogue. Baseline Controls include: $\ln(\# \text{ Motifs})$, $\ln(\text{Mean Words per Motif})$, $\log(\# \text{ Authors})$, Year of First Publication FE (before 1900, between 1900 and 1950, after 1950). Standard errors are clustered at the language family level as classified in the EA, v98. ***, **, * denote significance at 1%, 5% and 10%, respectively. See Data Appendix for variables definition's.

Folklore and Current Attitudes

- ▶ How is culture transmitted across generations?

Folklore and Current Attitudes

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- ▶ Conjecture: it is the stories that people tell the vehicle of intergenerational transmission of attitudes and beliefs.

Folklore and Current Attitudes

- ▶ Does folklore predict current attitudes?

$$Belief_g = a_0 + \beta \ln(\text{Topic-Specific Motifs}_g) + \varepsilon_g$$

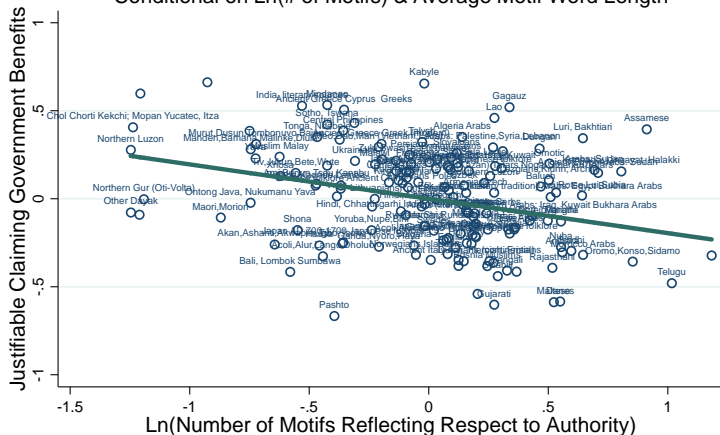
- ▶ *Topic-Specific Motifs_i* : number of motifs that correspond to (i) respect for authority, (ii) family in group' g oral tradition.
- ▶ *Belief_g* : average response of individuals belonging to group g .
 - ▶ Always control for:
 - ▶ **ln(# of motifs per oral tradition)**
 - ▶ **ln(average word length per motif)**
 - ▶ ln(# of authors)
 - ▶ FE for date of first publication

Rule Following Norms in Folklore and Rule Following Today

- ▶ Societies whose motifs focus on respect to authority and respect more generally are they likely to find rule-breaking behavior justifiable?
- ▶ WVS-EVS: "It is justifiable to collect government benefits"
- ▶ WVS-EVS: "It is justifiable not to pay transportation fare"
- ▶ WVS-EVS: "It is justifiable to accept a bribe"
 - ▶ lower values respondent finds these actions less justifiable

Respect in Folklore and Rule-Breaking Today

Respect for Authority in Folklore: Claim Govt Benefits
Conditional on Ln(# of Motifs) & Average Motif Word Length



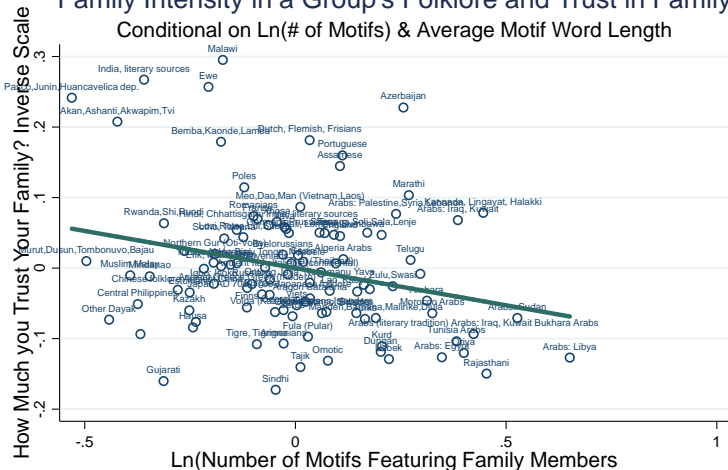
coef = -.19523883, (robust) se = .05001502, t = -3.9

Family in Folklore and Importance of Family Today

- ▶ Societies whose oral tradition features images and episodes related to family; are their respondents more likely to trust their family?
- ▶ WVS-EVS: "How much you trust your family?"
 - ▶ lower values: respondent trusts his/her family more
- ▶ Motif m38a1: Title - Imitating wife's kinfolk; Description - Person imitates actions of his son- or brothers-in-law or of his wives; Count 26.

Family in Folklore and Importance of Family Today

Family Intensity in a Group's Folklore and Trust in Family
 Conditional on Ln(# of Motifs) & Average Motif Word Length



coef = -.10536441, (robust) se = .04500183, t = -2.34

Main Contributions

- ▶ Vast literature on culture and economic performance
- ▶ Misses a key ingredient: proxies of pre-industrial norms

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- ▶ Misses a key ingredient: proxies of pre-industrial norms
- ▶ This paper: First step towards quantifying the beliefs and attitudes of pre-industrial societies

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 - ▶ geographic attributes (earthquakes, thunders, cold, etc.) have left a trace on a group's oral tradition
 - ▶ frequency of motifs that reflect different subsistence modes predicts actual subsistence economy of pre-industrial groups.
 - ▶ frequency of motifs on hierarchy predicts institutional strength of pre-industrial groups.

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 - ▶ frequency of motifs that reflect different subsistence modes predicts actual subsistence economy of pre-industrial groups.
 - ▶ frequency of motifs on hierarchy predicts institutional strength of pre-industrial groups.
- ▶ Oral tradition: a so far unutilized source of information on pre-industrial societies

Folklore Uses

- ▶ Reconstruct historical norms from oral traditions
 - ▶ Use these new proxies to shed light on long-standing conjectures in social science
 - ▶ role of women in plow societies, culture of honor among pastoralists, rule following and respect in hierarchical societies, leisure among hunter/gatherers
 - ▶ Pending: collectivism and individualism, sexuality across different lifeways, presence of high Gods, etc.

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 - ▶ Pending: collectivism and individualism, sexuality across different lifeways, presence of high Gods, etc.
- ▶ Show that historical norms reverberate into beliefs and attitudes today

Next Tasks - Open Questions

- ▶ Improve coding of motifs.
 - ▶ Use mechanical Turk to read through each motif and classify into categories.
 - ▶ Do some formal text analysis, going behind Berezkin's motifs and use underlying (summaries of) tales/legends.
- ▶ Working on compiling a list of proverbs per group/country
- ▶ Attempt to recover within-tradition over time variation in folklore

Next Tasks - Open Questions

- ▶ What is the relationship between folklore and religion?
- ▶ Construct bilateral cultural distance measures based on groups' oral traditions
- ▶ Armed with a proxy of historical values can now look at persistence and change of culture over time.
- ▶ Trace changes in culture over the 20th, 21st century using text from songs, movies, and popular culture

Cosmological Motifs

- ▶ Name: **Thunder** in trouble falls to earth
 - ▶ **Thunder** falls to earth, cannot return to the sky. Usually a human person helps him to do it; Count: 26

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 - ▶ **Thunder** falls to earth, cannot return to the sky. Usually a human person helps him to do it; Count: 26

- ▶ Name: The dead shake the earth
 - ▶ The **earthquakes** are produced by the dead who are in the underworld or during the earthquakes the inhabitants of the lower world try to come out; Count: 19

- ▶ Name: The **flood** and the wet tails
 - ▶ During the flood birds or animals escape to some place (mountain, tree, boat, sky). Tips of their tails or other body parts get covered with water or foam and acquire their present color and form; Count: 24

Cosmological Motifs

- ▶ Name: **Eclipses** a monster's attack
 - ▶ Some creature or creatures regularly (sunrise and sunset, summer and winter, lunar phases) or irregularly (solar and lunar eclipses, eschatological events) attack the luminaries or shade their light; Count: 276

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- ▶ Name: Waves turn into mountains
 - ▶ Waves of the sea petrified and turned into dry land with mountain chains; Count: 10

Non-Cosmological Motifs

- ▶ Name: Grazing animals to be preserved by a **herdsman**
 - ▶ A man had to graze animals. If at least one is lost, the master would kill (not reward) him; Count: 27

Non-Cosmological Motifs

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 - ▶ A man had to graze animals. If at least one is lost, the master would kill (not reward) him; Count: 27

- ▶ Name: The dog and the ear of the cereal
 - ▶ Properties of the **cereals** (usually the size of the spike) are defined by what the dog did in time of creation. Count: 25

Non-Cosmological Motifs

- ▶ Name: Grazing animals to be preserved by a **herdsman**
 - ▶ A man had to graze animals. If at least one is lost, the master would kill (not reward) him; Count: 27
- ▶ Name: The dog and the ear of the cereal
 - ▶ Properties of the **cereals** (usually the size of the spike) are defined by what the dog did in time of creation. Count: 25
- ▶ Name: Expedition to the upper world
 - ▶ Description: People regularly ascend to the sky for **hunting, fishing** or **gathering**; do not give honey, fish or proper meat to the old person remained below; she or he makes their return impossible, they remain in the sky; Count: 7

Non-Cosmological Motifs

- ▶ Name: Demon comes to **hunter's** camp-fire
 - ▶ A hunter spends night in a desolate place. A demon comes to his fire. When the demon falls asleep or goes away for a while, the hunter puts his clothes over a log and hides nearby. When the demon attacks the log taking it for the man, the hunter wounds or kills the demon. Count 21

Non-Cosmological Motifs

- ▶ Name: Demon comes to **hunter's** camp-fire
 - ▶ A hunter spends night in a desolate place. A demon comes to his fire. When the demon falls asleep or goes away for a while, the hunter puts his clothes over a log and hides nearby. When the demon attacks the log taking it for the man, the hunter wounds or kills the demon. Count 21
- ▶ Name: Hook from the sky
 - ▶ The sky dwellers **fish** human beings who live on earth with a line and a hook; Count: 15

Non-Cosmological Motifs

- ▶ Name: Rock punishes **trickster**
 - ▶ Rock chases or otherwise punishes person who has offended it Count: 20.

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- ▶ Name: Seven with one stroke
 - ▶ A weak man overcomes **accidentally** powerful enemies and gets high esteem; Count: 93

Non-Cosmological Motifs

- ▶ Name: Rock punishes **trickster**
 - ▶ Rock chases or otherwise punishes person who has offended it Count: 20.

- ▶ Name: Seven with one stroke
 - ▶ A weak man overcomes **accidentally** powerful enemies and gets high esteem; Count: 93

- ▶ Name: The epoch of women
 - ▶ The **women .. practised activities which now are reserved for men**; Count: 63

Folklore and Current Values

- ▶ Does folklore predict current attitudes?

$$\text{Belief}_{i,c,g} = a_c + \beta \ln(\text{Topic-Specific Motifs}_g) + \gamma \ln(\text{Total Motifs}_g) + \delta X_{i,c,g}$$

- ▶ *Topic-Specific Motifs_i* : number of motifs that correspond to luck, obedience, etc. of group *g*
- ▶ *Belief_{i,c,g}* : attitude of individual *i* living in country *c* and identifying with group *g*.
- ▶ *X_{i,c,g}* : individual controls including age, education, sex
- ▶ *a_c* : continent/country fixed effects
- ▶ standard errors clustered at the language group level)

What Period Does Folklore Correspond to?

- ▶ Is folklore timeless or ephemeral?
 - ▶ This is similar to asking whether culture is ephemeral or persistent
 - ▶ There is a fierce debate on this
 - ▶ Tales on Cosmological/etiological motifs are considered earlier than motifs on society-oriented motifs.
 - ▶ In Richard Dorson's words (eminent American folklorist): "folklorists are not especially history minded, and prefer to examine folk materials by category, such as folktale and folksong, proverb and riddle, rather than by historical period" (1961, 12-13).

Motifs in Laos' Oral Tradition

motif_id	name_eng	motif_id	name_eng
a32	Figure on lunar disc	k24	Stolen clothes of supernatural woman
a32d	Man in the Moon	k24b	To dance in her magic clothes
c19	Acquisition of the sun	k27n1	Task-giver is a king or a chief The man persecuted because of his
c23	Tree eclipses sky-light	k27x3	beautiful bride
e38b	People from gourd	k27zz	The outcast queens and the ogress queen
e5a	Mankind ascends from the underworld	k37	Recognition-test The worthy man is rewarded, the
e9	The mysterious housekeeper	k56b	unworthy punished
e9c	Elephant-, buffalo-, elk-wife	k56c	Golden ax
g23	Alive being turns into many objects	k73	Children of the youngest wife
g23a	Alive being turns into plants	k73a	Baby child substituted with pup
g6	Primeval tree	k77a	Small objects and animals defeat the ogre
h34c	Flying rice	k79	Snake serves an example of resuscitation
h34g	One grain porridge	k80	Person not subject to annihilation
k118	The prohibited room	k99a1	Smart man is rescued from prison
k14	Precious advices	l72	The obstacle flight
k142	Corpse buried many times	m145	The lion in a well The profitable exchange: from a pea to a
k143	Hero is a fowler	m171	horse
k144	The predestined death because of an animal	m21	A protector hides fugitives
k153	Grateful animals, ungrateful man	m40	The distorted instructions
		m45a	Old man and animals

An Attempt to Time the Origins of Folklore

- ▶ Time-Varying Geography.
 - ▶ Eclipses are (i) time-varying, (ii) location specific, and (iii) can be measured precisely over thousands of years
 - ▶ Eclipses of which time period show up in a group's folklore?
 - ▶ Example, motif a12f: A creditor comes from time to time to the Sun or the Moon to claim back his money producing eclipses. # groups 14.

Timing the Emergence of Motifs Based on Eclipses

Timing Folklore

Number of Motifs on Eclipses					
# Eclipses 2nd Millenium BC	-0.1375 (0.0933)				-0.1011 (0.0918)
# Eclipses 1st Millenium BC		0.2182*** (0.0598)			0.2041*** (0.0559)
# Eclipses 1st Millenium AD			-0.0543 (0.0636)		-0.0480 (0.0611)
Number of Eclipses 2nd			0.0260 (0.0579)		0.0072 (0.0535)
Continental FE	No	No	No	No	No
Country FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.358	0.531	0.457	0.59	0.266
N	1237	1237	1237	1237	1237

Notes: The table reports OLS estimates. All columns control for the log total number of motifs and the log average number of words per motif. ***, **, * denote significance is 1%, 5%, and 10% level, respectively. Standard errors are clustered at the language family level. See Data Appendix for variables definitions and Table 1 Panel B for summary statistics.

Psychological Categories in LIWC

- ▶ Affective processes
 - ▶ positive emotion
 - ▶ negative emotion
 - ▶ anger
 - ▶ sadness
 - ▶ anxiety
- ▶ social processes
 - ▶ family
 - ▶ friends
 - ▶ male referents
 - ▶ female referents

Psychological Categories in LIWC

- ▶ cognitive processes
 - ▶ insight
 - ▶ causation
 - ▶ discrepancy
 - ▶ tentative
 - ▶ certainty
 - ▶ differentiation
- ▶ perceptual processes
 - ▶ see
hear
 - ▶ feel

Psychological Categories in LIWC

- ▶ biological processes

- ▶ body
- ▶ health
- ▶ sexual
- ▶ ingestion

- ▶ drives

- ▶ affiliation
- ▶ achievement
- ▶ power
- ▶ reward
- ▶ risk

Psychological Categories in LIWC

- ▶ time orientation
 - ▶ past focus
 - ▶ present focus
 - ▶ future focus
- ▶ relativity
 - ▶ motion
 - ▶ space
 - ▶ time

Psychological Categories in LIWC

- ▶ personal concerns
 - ▶ work
 - ▶ leisure
 - ▶ home
 - ▶ money
 - ▶ religion
 - ▶ death