

Cultural Transmission and Narrative Drift: Modeling Information Dynamics in Anomalous Biological Reports

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Abstract

Reports of anomalous biological encounters are frequently dismissed on the grounds that cultural familiarity, folklore, and prior exposure contaminate testimony beyond analytical usefulness. This paper examines cultural transmission as a structured process that shapes report content without presupposing deception or perceptual failure. Drawing on research in rumor dynamics, social learning, memory reconstruction, and cognitive schema formation, the analysis distinguishes between narrative drift, convergence through transmission, and independent recurrence. While cultural transmission introduces noise into report corpora, it does not necessarily eliminate informational value. Instead, contamination must be explicitly modeled and constrained rather than treated as a terminating explanation.

1. Introduction: Contamination as Explanation vs. Contamination as Process

One of the most common skeptical responses to anomalous biological reports is the assertion that witnesses are merely reproducing stories they have already encountered through media, folklore, or popular culture. In this framing, prior exposure functions as a global disqualifier: if people have heard about Bigfoot, then their reports are presumed to be derivative rather than observational.

As with hoaxing, cultural contamination is often invoked rhetorically rather than examined analytically. Yet cultural transmission is not a singular mechanism but a set of processes with predictable effects on narrative content, recall, and reporting behavior (Allport & Postman, 1947; Bartlett, 1932). If cultural transmission dominates the formation of anomalous reports, it should leave structured, detectable signatures across time, geography, and descriptive content.

This paper treats cultural transmission not as a refutation of reports, but as a **process variable** that must be explicitly modeled alongside misidentification, hoaxing, and observer error.

2. Defining Cultural Transmission and Prior Exposure

Cultural transmission refers to the spread of narrative elements, motifs, terminology, and interpretive frames through social interaction, media exposure, and shared symbolic systems (Sperber, 1996). **Prior exposure** describes an individual's familiarity with these elements before an experience occurs.

These processes must be distinguished from related but non-identical mechanisms:

- **Hoaxing**, which involves intentional fabrication (Fine, 2007)
- **Misperception**, which arises from sensory and cognitive limitations (Kahneman, 2011)
- **Confabulation**, in which memory fills gaps unconsciously (Bartlett, 1932)

Conflating these mechanisms obscures causal inference. Cultural transmission operates without intent to deceive and can influence honest observers, making it analytically distinct from hoaxing.

3. Why Cultural Transmission Is Inevitable

Human perception and memory are not passive recording systems. They are shaped by schemas—organized knowledge structures that guide attention, interpretation, and recall (Bartlett, 1932). In environments saturated with narrative frameworks, it would be surprising if anomalous experiences were *not* interpreted through culturally available categories.

Research in cognitive anthropology and psychology demonstrates that people rely on existing concepts to make sense of ambiguous stimuli, particularly under conditions of stress, uncertainty, or limited information (Boyer, 2001; Nickerson, 1998). Consequently, the presence of culturally familiar descriptors in reports does not, by itself, indicate fabrication or copying.

Cultural influence is therefore best treated as a background condition rather than an exceptional contaminant.

4. Mechanisms of Narrative Drift

Once an experience is interpreted and reported, it becomes subject to **narrative drift**—systematic changes that occur as stories are retold, summarized, or reframed.

Classic research on rumor transmission identifies three dominant processes (Allport & Postman, 1947):

- **Leveling:** loss of detail over retelling
- **Sharpening:** emphasis on salient or emotionally charged elements
- **Assimilation:** adjustment to fit cultural expectations

These processes operate even in the absence of deception. Interviewer prompts, audience reactions, and community feedback further shape narrative content, often without the awareness of the reporter (Dégh, 2001).

Narrative drift is therefore expected in any long-lived report corpus and should not be treated as diagnostic of dishonesty.

5. Convergence vs. Independent Recurrence

A critical analytical distinction must be made between **convergence through transmission** and **independent recurrence**.

5.1 Convergence Through Transmission

Cultural transmission tends to produce:

- shared vocabulary and labels
- standardized descriptors
- alignment with iconic imagery

Such convergence is particularly strong following mass-media exposure and is a well-documented feature of rumor systems (Fine & Ellis, 2010).

5.2 Independent Recurrence

Independent recurrence refers to the repeated emergence of similar descriptive elements without direct transmission pathways. Such recurrence may reflect:

- environmental constraints
- perceptual affordances
- shared biological or behavioral features of a stimulus

Convergence alone does not establish copying. Analytical rigor requires examining whether similarities exceed what would be expected under independent observation.

6. Prior Exposure and Expectation Effects

Prior exposure influences how ambiguous stimuli are interpreted, but its effects are asymmetric. Expectation shapes **interpretation** more strongly than **perception** itself (Kahneman, 2011). While familiarity may increase confidence in labeling an experience, it does not reliably generate novel sensory detail.

Experimental work on expectancy effects shows that prior beliefs bias recall and categorization but rarely create complex, internally consistent perceptual content in the absence of stimulus support (Nickerson, 1998). As a result, prior exposure is more likely to affect *what* a witness thinks they encountered than *what* they actually perceived.

7. What Cultural Transmission Explains Well

Cultural transmission provides a strong explanatory account for several features of anomalous report corpora:

- standardization of terminology over time
- amplification of culturally salient motifs
- increased report frequency following media attention
- retrofitting of ambiguous experiences into familiar categories

These effects are well-established in folklore and rumor research and should be expected in any socially shared narrative domain (Dégh, 2001; Fine & Ellis, 2010).

8. Where Cultural Transmission Strains as a Global Explanation

Despite its explanatory power, cultural transmission encounters limitations when applied universally to anomalous biological reports. If narrative contamination were the dominant driver, reports would be expected to converge rapidly toward a narrow set of culturally reinforced motifs and to track changes in media portrayal closely over time (Allport & Postman, 1947; Fine & Ellis, 2010).

However, several features of the report corpus introduce friction into this model. These include the persistence of regionally specific descriptors, the long-term stability of certain behavioral claims across generations, and reports originating from individuals with limited cultural exposure to Bigfoot narratives (Bartlett, 1932; Dégh, 2001). Additionally, some reported features emerge that are not emphasized in dominant media representations, complicating a purely transmission-based account.

These discrepancies do not validate alternative explanations, but they indicate that cultural transmission alone does not exhaust the explanatory space.

9. Interaction With Other Explanatory Models

Cultural transmission does not operate in isolation. It interacts with other mechanisms, including misidentification, hoaxing, and perceptual bias, shaping how experiences are interpreted and reported rather than generating them wholesale (Nickerson, 1998; Kahneman, 2011).

For example, misidentified stimuli may be narratively stabilized through culturally available categories, while hoax narratives may draw selectively on familiar motifs to enhance plausibility (Fine, 2007). Treating cultural transmission as a singular causal explanation obscures these interactions and risks conflating amplification with origin.

More productively, cultural transmission should be modeled as a **modifier process**—one that alters report expression without necessarily determining the nature of the underlying stimulus (Sperber, 1996).

10. Statistical Expectations Under a Contamination-Dominant Model

If cultural transmission were the dominant force shaping anomalous biological reports, several expectations would follow. These include rapid homogenization of descriptive features, strong alignment with contemporaneous media portrayals, declining variance in report content over time, and erosion of regionally bounded characteristics (Allport & Postman, 1947; Boyd & Richerson, 1985).

While portions of the corpus exhibit such patterns—particularly following periods of heightened publicity—other aspects depart from these expectations. The continued presence of geographically clustered descriptors and the persistence of certain behavioral claims across long time spans suggest that additional structuring influences may be operating (Henrich, 2016; Fine & Ellis, 2010).

11. Synthesis: Noise, Not Erasure

Cultural transmission reliably introduces noise into report corpora by reshaping language, emphasis, and interpretive framing. However, the presence of noise does not imply the absence of informational content. Treating contamination as a terminating explanation prematurely forecloses analysis and substitutes dismissal for modeling (Sperber, 1996; Dégh, 2001).

As with hoaxing, cultural transmission functions most effectively as a **filtering and shaping process** rather than as a global refutation. Explicitly acknowledging its effects allows uncertainty to be bounded rather than ignored, improving inferential discipline across the corpus.

12. Implications for Corpus-Level Analysis

Recognizing cultural transmission as an inevitable influence supports a shift away from testimonial adjudication toward corpus-level analysis. Reports are better treated as structured observations under constraint than as narratives to be individually validated or dismissed (Bartlett, 1932; Nickerson, 1998).

Modeling contamination explicitly allows researchers to account for shared vocabulary, motif drift, and expectation effects while preserving the possibility of residual signal. Subsequent analyses examine how these dynamics interact with evidence modality, regional patterning, and research design under conditions of uncertainty (Henrich, 2016; Kahneman, 2011).

13. Using Cultural Transmission as an Analytical Filter in Practice

Treating cultural transmission as a filtering process rather than a terminating explanation allows analysts to reduce noise in report corpora without discarding potentially informative material. This approach does not attempt to identify “untainted” reports, nor does it presume that contamination can be eliminated. Instead, it evaluates how transmission pressures are likely to shape report features and adjusts inference accordingly (Bartlett, 1932; Sperber, 1996).

The practical application of this filter rests on **pattern-level evaluation**, not individual judgment.

13.1 Temporal Contextualization

One of the most direct applications of a cultural transmission filter involves situating reports within their temporal media environment. Periods of heightened publicity, popular media releases, or viral circulation of imagery are expected to produce increases in report volume and convergence in descriptive language (Allport & Postman, 1947; Fine & Ellis, 2010).

In practice, this suggests:

- weighting descriptive novelty lower during media spikes,
- treating sudden motif appearance with caution,
- and emphasizing temporal stability over immediacy.

Reports that predate major media cycles, or that persist across multiple cycles with consistent core features, are less likely to be fully explained by short-term transmission effects.

13.2 Vocabulary and Descriptor Normalization

Cultural transmission tends to standardize terminology. Analysts should therefore distinguish between **labels** and **descriptors**. The use of culturally common labels (e.g., “Bigfoot”) is expected and carries little analytical weight, whereas the persistence or variation of underlying descriptive elements is more informative (Dégh, 2001; Boyd & Richerson, 1985).

Practically, this means:

- collapsing synonymous labels during analysis,
- focusing on behavioral, spatial, and temporal descriptors,
- and tracking descriptor frequency independent of narrative framing.

This reduces the influence of shared vocabulary without discarding the observation itself.

13.3 Motif Saturation and Feature Weighting

When certain features become culturally saturated—widely depicted, discussed, or emphasized—their presence in reports should be weighted conservatively. Cultural saturation increases the probability that ambiguous stimuli will be interpreted in motif-consistent ways (Nickerson, 1998; Kahneman, 2011).

Conversely, features that:

- are rarely emphasized in popular portrayals,
- persist across time despite changing media narratives,
- or appear inconsistently rather than stereotypically,

may warrant closer examination, even when reported within culturally saturated contexts.

13.4 Stability Versus Drift Across Retellings

Cultural transmission predicts drift under retelling, particularly for secondary or narrative elements. Analysts can therefore treat **core-feature stability** as more informative than narrative embellishment (Bartlett, 1932).

In practice:

- core spatial, temporal, and behavioral features are tracked longitudinally,

- peripheral narrative elements are treated as low-weight noise,
- and increasing certainty or embellishment over time is interpreted cautiously.

Importantly, **loss of certainty** over time is not penalized and may be more compatible with honest recall than with motivated narrative shaping.

13.5 Ethical Constraints and Interpretive Modesty

Applying cultural transmission as a filter does not permit conclusions about witness reliability or intent. Honest observers may produce highly contaminated reports, and deceptive actors may produce reports that appear culturally minimal. Accordingly, filtering operates at the level of **analytical weighting**, not exclusion (Sperber, 1996; Henrich, 2016).

The goal is not to purify the corpus, but to model how shared culture reshapes observational data under uncertainty.

13.6 Relationship to Other Filters

Cultural transmission filtering is most effective when applied alongside other evaluative frameworks, including hoax compatibility, misidentification plausibility, and environmental constraint modeling. These filters are additive rather than competitive, each removing different classes of noise while preserving residual structure for further analysis (Fine, 2007; Nickerson, 1998).

Subsequent analyses apply these filtering principles in conjunction with modality-specific constraints to examine which patterns persist after accounting for cultural transmission effects.

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