Interpreting the Forces at Work: Using AI to Model Story Dynamics in Phase Space

Stan Ruecker · Mike Cartwright (AI collaborator)
Phasespace Design Lab

Abstract

This article examines how a generative language model can function as an experimental instrument for observing narrative dynamics rather than as a source of a single definitive literary interpretation. A prototype developed within Phasespace Custodian Intelligence (PSCI) treats events in Edgar Allan Poe's 'The Tell-Tale Heart' as interventions in a changing system of agents, constraints, and possible trajectories. The manuscript reports a consolidated log of forty-two candidate interventions across eighteen paragraphs, annotated for force, leverage, effectiveness, and propagation. It describes derived representations of cumulative custodial pressure and the distribution of force and leverage. In this reading, the narrator's repeated efforts to restore control instead increase instability, culminating in confession. The proposed measures are heuristic instrument readings tied to passages in the story, not literal physical measurements or substitutes for critical judgment. The paper offers a methodological demonstration and identifies opportunities for subsequent comparative work on alternative interpretations and other narrative forms.

Keywords: computational literary studies; phasespace custodianship; artificial intelligence; narrative dynamics; systemic interventions; force and leverage; The Tell-Tale Heart

Introduction

Recent advances in artificial intelligence have produced systems capable of generating fluent literary interpretation. When asked to analyze a story, contemporary language models can summarize plot, identify themes, and articulate plausible explanations of character motivation with remarkable ease. These capabilities have encouraged growing interest in the use of generative models within literary study. At the same time, they raise a methodological difficulty. The interpretations produced by such systems tend to converge toward a single explanatory narrative. Different prompts often lead to responses that reorganize similar interpretive claims rather than exposing genuinely distinct structural readings of the text.

For literary scholars, however, interpretation rarely unfolds as a single trajectory. Critical reading typically involves exploring multiple ways of understanding the relationships among events, motives, and consequences within a narrative. A story can be approached through different causal chains, different emphases of thematic force, or different accounts of how particular actions influence later developments. These interpretive possibilities suggest that a narrative may be understood not only as a sequence of events but also as a dynamic system whose internal forces can be arranged and examined in multiple ways.

This paper proposes that artificial intelligence can serve as an instrument for exploring that system. Rather than using generative models to produce a single interpretation, the experiment described here treats the model as a mechanism for generating alternative structural representations of a narrative. The guiding idea is that a story can be modeled as a form of phase space: a conceptual environment in which multiple possible interpretive trajectories can be mapped and compared. Within such a space, each interpretation corresponds to a particular arrangement of narrative forces—causal relations, thematic pressures, and structural constraints—that shape the movement of events through the story.

To explore this possibility, the study employs a prototype experimental apparatus that guides a generative model toward producing multiple distinct structural interpretations of a narrative text. The apparatus introduces structural constraints during generation that encourage the model to reorganize relationships among events rather than simply restating the most probable summary of the story. By collecting and comparing these generated interpretations, the experiment seeks to make visible the range of structural possibilities that may exist within the narrative.

The purpose of the experiment is therefore not to determine a single correct interpretation of the text. Instead, it aims to investigate whether generative AI can be used to model the interpretive dynamics of narrative systems. If successful, such an approach would allow literary scholars to examine stories as landscapes of interacting forces whose trajectories can be explored computationally while remaining open to human interpretation.

The remainder of the paper describes the prototype apparatus used to generate these interpretive variants, the design of the study, and the procedures used to analyze the resulting representations of the narrative system.

Literature Review

Computational Criticism, Narrative Systems, and the Analysis of Possibility

Digital humanities research relevant to the present framework has developed along several related lines: computational approaches that treat algorithms as instruments for interpretive exploration, statistical analysis of literary corpora, and experimental projects that model the internal dynamics of narrative systems. The present framework draws selectively from these traditions while addressing a more specific problem: how events within a narrative alter the range of futures that remain available within the story world.

One influential articulation of computational criticism appears in Stephen Ramsay's discussion of algorithmic criticism (Ramsay 2011). Ramsay proposed that computational procedures should be understood not as mechanisms for extracting objective truths from literary texts but as formalized interpretive gestures that transform texts in systematic ways. Once transformed, the text can be examined from a new vantage point. Interpretation remains the responsibility of the critic. The algorithm therefore functions as an experimental instrument that generates conditions under which new interpretive questions can emerge.

Related ideas about the relationship between computation and humanities scholarship appeared earlier in John Unsworth's formulation of "scholarly primitives," which described basic operations common across humanities research, including discovering, annotating, comparing, referring, sampling, illustrating, and representing (Unsworth 2000). From this perspective computational tools extend established scholarly practices rather than replacing interpretive reasoning. Early experimental systems such as NORA (No One Reads Alone) and MONK (Metadata Offer New Knowledge) explored how machine-learning techniques could assist scholars in identifying patterns within literary texts while preserving the interpretive role of the researcher. These projects demonstrated that computational methods could function as exploratory instruments within literary scholarship.

A related line of development appeared in the Implementing New Knowledge Environments (INKE) project, directed by Ray Siemens, which investigated the affordances of digital text and experimental scholarly interfaces (Siemens et al. 2009). Research within INKE emphasized the design of digital apparatus capable of supporting exploratory interaction with textual materials, including visualizations and experimental reading environments (Ruecker et al. 2014). This orientation toward apparatus and experimental interface design provides an important conceptual precedent for computational approaches that treat analysis as an interaction between scholar and instrument.

The interpretive orientation of such work is articulated clearly in Geoffrey Rockwell and Stéfan Sinclair's account of computer-assisted interpretation. In *Hermeneutica*, Rockwell and Sinclair argue that computational tools should be understood as instruments that expand the range of interpretive experimentation available to humanities scholars rather than as mechanisms that replace critical judgment (Rockwell & Sinclair 2016). The goal of computational humanities research in this view is to generate structured observations that scholars may evaluate in relation to broader interpretive concerns.

Computational literary scholarship has also explored statistical approaches that identify patterns across literary corpora. Topic modeling and related probabilistic techniques have been used to detect recurring thematic structures within large textual collections (Blei 2012; Jockers & Mimno 2013). As Underwood (2019) emphasizes, such analyses reorganize the evidentiary landscape of literary interpretation by producing new forms of structured evidence rather than replacing the need for interpretive explanation.

Alongside corpus-scale approaches, several projects have explored ways of representing narrative dynamics within individual texts. Johanna Drucker's work on interpretive visualization argues that graphical representations in the humanities should be understood as analytical constructs rather than neutral displays of data (Drucker 2014). Teresa Dobson and collaborators have developed interactive visualizations of plot structure that allow scholars to examine narrative development through graphical interfaces (Dobson et al. 2011). Related work by Jennifer Roberts-Smith and collaborators on the Simulated Environment for Theatre (SET) models relationships among agents, actions, and performance conditions within dramatic texts, creating digital environments that allow scholars to explore the structural dynamics of theatrical works (Roberts-Smith et al. 2013). These projects demonstrate how digital tools can make structural features of narrative systems visible while leaving interpretive evaluation with the scholar.

The conceptual foundations of the present framework also intersect with developments in narrative theory. Narratives have long been understood as systems in which events interact through causal relations that shape the unfolding of the story world (Abbott 2008). Possible-worlds narratology describes fictional worlds as structured systems of states governed by modal constraints that determine which events may occur within the narrative environment (Doležel 1998). Marie-Laure Ryan extends this perspective by describing narrative progression as movement through a space of possible states in which events redirect or restrict available narrative trajectories (Ryan 1991; Ryan 2006). These approaches provide an important conceptual precedent for treating narratives as systems whose possible futures evolve over time.

Literary theory has also examined how broader social and ideological structures shape the conditions under which actions

become possible within narrative worlds. Work in narrative pragmatics has explored how literary discourse establishes communicative situations that constrain interpretation and action within the fictional environment (Pratt 1977). Discourse theory similarly analyzes how systems of knowledge and power define fields of possible statements and behaviors (Foucault 1972). Within Marxist literary theory, Fredric Jameson's account of the "political unconscious" describes narratives as symbolic responses to structural pressures generated by historical and ideological conditions (Jameson 1981). Feminist and queer theory have likewise emphasized how normative systems regulate the range of socially intelligible actions and identities (Butler 1990). Taken together, these traditions examine how systems of constraint shape the possibilities available within both fictional and social worlds.

Finally, the systemic perspective adopted here resonates with research in complex systems theory. Complex systems are often described as environments defined by interacting constraints in which trajectories evolve through spaces of possible states (Mitchell 2009). From this perspective systemic change can be understood as movement through regions of stability and instability within a configuration space.

The phasespace custodianship framework developed in this article builds upon these traditions while introducing a distinct analytical emphasis. Earlier computational approaches have often focused on patterns within textual language or statistical regularities across large collections of works. The present framework instead treats narrative actions as interventions that alter the structural conditions under which future events become possible. The computational apparatus described in the following sections records such interventions and traces their cumulative effects across the narrative sequence. The resulting dataset functions as an observational record of systemic change within the narrative environment.

Prototype Apparatus for Modeling Narrative Phase Space

The experiment described in this paper employs a prototype analytical instrument developed within the broader research program on Phasespace Custodian Intelligence (PSCI). The purpose of the apparatus is to explore whether narrative texts can be examined as dynamic systems whose internal forces produce patterns of stability, disruption, and reorganization. Rather than treating a story solely as a sequence of events or as a container for thematic meaning, the apparatus approaches the narrative as a system operating within a conceptual phase space defined by interacting agents, institutions, norms, and environmental constraints.

Within this framework, narrative events are interpreted as systemic interventions that influence the stability of the narrative world. Characters act within existing structures, respond to emerging pressures, and attempt to maintain or alter the conditions in which they operate. These actions can therefore be interpreted as forms of custodial activity: efforts to stabilize, repair, redirect, or exploit systemic conditions. The analytical task of the apparatus is to identify these interventions and to represent their relationships in a form that allows the dynamics of the narrative system to be examined.

The apparatus operates as a computational pipeline that converts a literary text into a set of structured observations describing systemic behavior within the narrative world. The source text is first obtained in a canonical form, preferably as a TEI XML document. The TEI representation is treated as the authoritative edition of the text. During preprocessing, the TEI file is converted into plain text while preserving structural continuity. Each paragraph is assigned a stable identifier of the form [p001], [p002], and so forth. These identifiers provide a durable reference system that allows every analytical claim produced by the apparatus to be traced back to a specific location in the source text.

After preprocessing, the text is divided into overlapping segments in order to support local analysis while preserving contextual continuity. Overlapping segmentation reduces the risk that important narrative relationships will be lost at the boundaries of analytical units. Each segment is then examined for candidate narrative interventions that alter or attempt to alter systemic conditions within the story world.

Detected interventions are annotated with a set of attributes designed to capture their systemic characteristics. These attributes include the custodial type of the intervention, the agent responsible for the action, the target affected by the intervention, and the scale at which the action operates. In addition, three evaluative measures are assigned to each event: force, leverage, and effect. Force estimates the magnitude of the intervention itself, leverage represents the degree to which the intervention amplifies its impact through existing systemic conditions, and effect reflects the observable consequences within the narrative system.

Because the segmentation process creates overlapping analytical windows, the same narrative intervention may be detected in multiple segments. A deduplication stage therefore consolidates repeated detections into a single canonical record. The result is a structured log of systemic interventions occurring throughout the story.

Several datasets are generated from this consolidated event log. The custodial log records each intervention together with its attributes and textual location. From this log, the apparatus constructs a cumulative pressure curve that estimates how systemic tension develops across the course of the narrative. The apparatus also produces a force–leverage distribution describing how different types of interventions operate within the narrative system. These datasets allow the analyst to observe patterns such as moments where small actions produce disproportionate systemic consequences or where large exertions fail to restore stability.

At a higher level of abstraction, the apparatus synthesizes these observations into a provisional schema describing the narrative phase space. This representation attempts to identify regions of relative stability, zones of instability, and potential phase transitions in which the structure of the narrative system changes. The resulting model does not claim to describe the story definitively. Instead, it provides a structured representation of systemic behavior that can be examined and interpreted by the researcher.

The outputs generated by the apparatus should therefore be understood as instrument readings rather than authoritative interpretations. They provide provisional measurements of the forces acting within the narrative system. The analytical task of the researcher is to evaluate whether the patterns revealed by these measurements illuminate meaningful aspects of the story's dynamics.

To maintain transparency between the instrument and the underlying literary work, all analytical claims remain traceable to specific paragraph identifiers in the source text. This traceability ensures that the computational observations produced by the apparatus remain anchored in the textual evidence from which they were derived.

Methods

This study uses a prototype experimental apparatus designed to operationalize the phasespace custodianship framework for the analysis of narrative systems. The apparatus treats a narrative as a dynamic environment in which events alter the structural conditions under which future events become possible. Rather than attempting to determine the meaning of a literary work automatically, the system generates structured observations that allow systemic dynamics within the narrative to be examined.

Conceptual Framework

The analytical model treats a narrative as a trajectory moving through a space of possible states. At the beginning of a story, the narrative system is defined by a set of initial conditions and a field of constraints that shape the actions available to characters, institutions, and environments within the story world. As the narrative unfolds, events function as interventions that modify those conditions.

Within the phasespace custodianship framework, particular attention is given to actions that attempt to maintain, redirect, or destabilize systemic conditions. These actions are described as custodial interventions. Some interventions reinforce existing constraints, while others redirect the system toward alternative trajectories or weaken structures that previously maintained stability. The accumulation of such interventions produces systemic pressure within the narrative environment and may eventually lead to structural transitions in the configuration of the story world.

Narrative development can therefore be described as a sequence of systemic adjustments. Periods of relative stability may be followed by phases of increasing pressure, instability signals, or transitions into new configurations of possibility.

Classification of Custodial Interventions

The apparatus identifies candidate custodial interventions within the narrative and classifies them according to operational categories that describe their functional role within the system rather than their thematic meaning.

The intervention categories used in the present implementation are:

- enforcement
- normalization
- suppression
- containment
- redirection
- repair
- sacrifice
- exit
- reconfiguration

These categories reflect a broader family of mechanisms through which systems respond to disturbance. In organizational theory, institutions maintain stability through processes such as rule enforcement, suppression of deviations, containment of disturbances, and structural reorganization (March & Simon 1958). Social responses to failing systems may include withdrawal or exit alongside attempts at repair or stabilization (Hirschman 1970). Psychological research on coping strategies similarly describes how agents respond to systemic stress through strategies that redirect, suppress, or reorganize behavioral responses (Lazarus & Folkman 1984). The intervention taxonomy used here adapts these general patterns of systemic response for the analysis of narrative environments.

Each detected intervention is annotated with a set of estimated systemic attributes:

- force level (1–5)
- leverage level (1–5)
- effect level (success–failure spectrum)
- propagation radius

Force represents the magnitude of effort associated with the intervention. Leverage describes the degree to which the intervention alters systemic conditions relative to the effort expended. Effect level estimates the outcome of the intervention in terms of systemic stabilization or destabilization. Propagation radius estimates how widely the consequences of the intervention extend within the narrative system.

Custodial Effectiveness Scale

Interventions are evaluated using a five-level effectiveness scale describing their systemic consequences:

- 1 — stabilizing success
- 2 — partial stabilization
- 3 — neutral effect
- 4 — failed intervention
- 5 — destabilizing failure

This scale allows the apparatus to represent the cumulative stabilizing or destabilizing effects of interventions across the narrative sequence.

Narrative Phasespace Profile

Beyond individual interventions, the apparatus attempts to characterize broader systemic properties of the narrative environment. These properties together form a phasespace profile of the story.

The phasespace profile includes heuristic descriptors such as constraint density, dominant stability basins, barrier height between narrative trajectories, instability regions, and potential branch points where the narrative system may shift toward a different configuration.

These descriptors function as analytical constructs that help describe how the narrative system evolves over time. They should not be interpreted as literal measurements of a multidimensional state space.

Derived Measures

Several aggregate measures are generated from the annotated interventions. These include cumulative custodial pressure across the narrative sequence, the distribution of interventions by force and leverage, and the density of destabilizing events.

One derived representation is a narrative pressure curve that estimates how systemic tension develops as the story progresses. Additional datasets examine the relationship between force and leverage, allowing moments of disproportionate systemic impact to be identified.

Data Source

The narrative examined in this study is Edgar Allan Poe's "The Tell-Tale Heart." The text was obtained from the Project Gutenberg edition of *The Works of Edgar Allan Poe: The Raven Edition, Volume II* (Project Gutenberg eBook 2148). This edition provides a stable and widely accessible digital source for computational analysis.

During preprocessing the story text was converted to plain text and each paragraph was assigned a persistent identifier of the form:

[p001], [p002], [p003]

These identifiers allow analytical observations to be traced directly to specific locations in the narrative.

Analytical Pipeline

The apparatus processes the narrative through a series of computational stages.

First, the source text is divided into overlapping segments to allow localized analysis while preserving contextual continuity. Each segment is then analyzed by a large language model configured to detect candidate custodial interventions within the narrative.

Detected events are annotated with the attributes described above, including custodial type, agent, target, and estimated systemic impact. Because overlapping segments may identify the same event multiple times, a deduplication step merges repeated detections into a single canonical event entry.

The result is a consolidated custodial log representing systemic interventions across the narrative sequence.

Outputs and Data Products

The apparatus produces several structured outputs that support subsequent analysis:

- custodial_log_deduped.json — inventory of detected custodial interventions
- custodial_pressure_curve.json / csv — cumulative custodial pressure across the narrative
- force_leverage_scatter.json / csv — distribution of interventions by force and leverage
- psci_story_schema.json — inferred phasespace profile of the narrative system

An HTML dashboard generated from these datasets allows the researcher to inspect the resulting patterns interactively.

Interpretive Role of the Apparatus

The outputs generated by the apparatus should be understood as instrument readings rather than authoritative descriptions of the literary text. They represent structured observations about systemic dynamics within the narrative environment.

Interpretation remains the responsibility of the scholar. The purpose of the apparatus is to produce a consistent observational record that allows patterns of stabilization, destabilization, and systemic transition to be examined in relation to the unfolding structure of the narrative.

Case Study Setup: Edgar Allan Poe's "The Tell-Tale Heart" as a Narrative System

The experimental apparatus described in the preceding sections was applied to Edgar Allan Poe's short story "The Tell-Tale Heart." The purpose of the case study is methodological rather than interpretive. The story provides a compact narrative environment in which systemic pressures, custodial actions, and structural transitions can be observed over a short sequence of events. Because the narrative is brief and tightly organized, the outputs produced by the apparatus can be examined directly alongside the source text.

Several characteristics make the story suitable for this type of exploratory analysis. First, the narrative unfolds through a clear sequence of actions taken by a single dominant agent. The narrator repeatedly attempts to stabilize a perceived disorder in the story world, which in this case takes the form of the narrator's fixation on the old man's "vulture eye." These repeated interventions provide a series of candidate custodial events that can be examined as attempts to reshape systemic conditions within the narrative environment.

Second, the story exhibits a pronounced escalation of tension. The narrator's nightly surveillance of the old man, the eventual act of murder, the concealment of the body, and the arrival of the police create a sequence of interventions that progressively alter the configuration of the narrative system. From the perspective of the phasespace custodianship framework, these events may be interpreted as attempts to restore equilibrium that instead generate increasing systemic pressure.

Third, the narrative contains a relatively small set of actors and institutions. This limited configuration simplifies the identification of systemic relationships among agents, actions, and constraints. The narrator, the old man, and the visiting police officers together form the primary agents through which the narrative system evolves. The physical environment of the house and the narrator's internal psychological state function as additional sources of constraint within the system.

The analysis therefore treats the story as a small but dynamically evolving narrative environment. Each paragraph in the text is assigned a persistent identifier during preprocessing so that candidate custodial events detected by the apparatus can be traced directly to specific locations in the narrative. These identifiers make it possible to compare the instrument's observational outputs with the original textual sequence.

Within this framework the story can be understood as a trajectory moving through a constrained space of possible states. The narrator's repeated attempts to control the situation—through surveillance, planning, murder, concealment, and deception—function as interventions intended to stabilize the system. The apparatus evaluates these interventions in terms of their systemic attributes, including force, leverage, and effectiveness, and records their cumulative effects on the evolving narrative environment.

The case study therefore serves as a controlled environment for examining how the PSCI apparatus represents narrative dynamics. The goal is not to replace literary interpretation with computational measurement but to evaluate whether the observational structures produced by the instrument correspond to recognizable shifts in the story's systemic configuration.

In the sections that follow, the outputs generated by the apparatus are presented as a series of analytical representations. These include an inventory of custodial interventions, a narrative pressure curve representing cumulative systemic tension, a distribution of interventions by force and leverage, and an inferred phasespace profile of the narrative system. Together these outputs provide a set of observational perspectives from which the dynamics of the story may be examined.

Results: Systemic Dynamics in The Tell-Tale Heart

Application of the PSCI apparatus to The Tell-Tale Heart produced a consolidated custodial log containing forty-two candidate interventions distributed across eighteen paragraphs of the narrative. These interventions were detected through the segmented analysis pipeline described above and subsequently consolidated through the deduplication stage. The resulting dataset provides a structured inventory of actions within the narrative that alter systemic conditions in the story world.

The intervention log reveals a strongly concentrated distribution of agency. The narrator is responsible for the majority of recorded interventions, including surveillance, suppression of noise, concealment of evidence, and attempts to redirect the attention of the police officers. Other agents appear less frequently. The old man functions primarily as the target of interventions, while the police officers enter the system near the conclusion of the story as institutional actors whose presence alters the configuration of the narrative environment.

This concentration of agency produces a distinctive custodial pattern. Instead of a distributed system in which multiple actors maintain or contest systemic stability, the narrative environment becomes progressively organized around the actions of a single dominant agent. The narrator repeatedly attempts to restore equilibrium within the system by eliminating what he perceives as a destabilizing element: the old man's eye.

The cumulative pressure curve derived from the intervention log illustrates how systemic tension develops across the narrative sequence. Early interventions associated with surveillance and preparation generate relatively modest increases in systemic pressure. These actions involve low levels of force but moderate leverage because they prepare the structural conditions under which later events become possible.

A pronounced increase in pressure occurs during the murder sequence. The narrator's attack on the old man and subsequent concealment of the body constitute high-force interventions whose systemic consequences propagate through the remainder of the story. These events significantly alter the configuration of

the narrative environment by introducing concealed instability within the system.

Following the concealment phase, the narrative enters a period of temporary equilibrium. The narrator believes that the system has been successfully stabilized. The arrival of the police officers introduces a new institutional presence within the environment, creating conditions under which the concealed instability becomes increasingly difficult to maintain.

The pressure curve rises sharply during the final sequence of the narrative as the narrator attempts to suppress the imagined sound of the old man's beating heart. These interventions exhibit high force but diminishing leverage. The narrator's escalating efforts to maintain control of the situation fail to restore systemic stability.

The final intervention recorded by the apparatus corresponds to the narrator's confession. This event represents a terminal structural transition within the narrative system. In custodial terms it may be interpreted as a sacrificial intervention in which the narrator relinquishes personal freedom in response to the systemic pressure generated by earlier actions.

The force–leverage distribution produced by the apparatus highlights an additional feature of the narrative system. Several early interventions involve relatively small actions that generate significant systemic consequences, such as the narrator's decision to observe the old man nightly. Later interventions require substantial effort yet produce limited stabilizing effect. This asymmetry suggests that leverage within the narrative environment shifts over time as the system approaches structural instability.

Taken together, these observations describe a narrative system characterized by escalating custodial pressure concentrated within a single agent. The story progresses through a sequence of interventions intended to restore equilibrium that instead generate increasing instability within the system.

Interpretation

The observational patterns produced by the PSCI apparatus correspond closely with structural features that literary critics have long associated with The Tell-Tale Heart. The story is frequently interpreted as a psychological narrative in which a protagonist attempts to assert rational control over a situation that progressively escapes that control. The custodial framework makes this dynamic visible in structural terms.

From the perspective of phasespace custodianship, the narrator's actions can be interpreted as repeated attempts to stabilize a perceived disorder within the narrative environment. Each intervention is intended to restore equilibrium. Instead, the interventions progressively restrict the range of viable trajectories available to the system.

The murder of the old man removes the immediate object of the narrator's fixation but introduces a concealed instability that propagates through the remainder of the story. Subsequent actions—dismemberment of the body, concealment beneath the floorboards, and attempts to deceive the police officers—represent additional custodial interventions that seek to preserve the newly constructed equilibrium.

The apparatus records these actions as increasingly forceful interventions with declining leverage. The narrator's capacity to stabilize the system diminishes as the narrative progresses. Pressure accumulates within the environment until the narrator's final confession produces a structural transition in the system.

Seen in this way, the narrative does not simply recount a sequence of psychological events. It models a dynamic system in which attempts to control instability generate additional constraints that ultimately render the system unsustainable. The resulting collapse appears in the pressure curve as a terminal spike followed by a decisive structural shift.

The significance of this analysis lies less in the interpretation itself than in the observational framework that produces it. The PSCI apparatus generates a structured record of systemic interventions that can be examined alongside the text. These observations provide an additional analytical perspective from which the dynamics of the narrative may be explored.

The results therefore suggest that the phasespace custodianship framework offers a useful descriptive language for examining how narratives organize the conditions under which future events remain possible.

Conclusion

This study introduces a prototype analytical apparatus designed to examine literary narratives as dynamic systems evolving within a structured field of possibilities. Rather than treating artificial intelligence as a mechanism for producing interpretive summaries, the experiment employs a language model as an instrument for recording systemic interventions within a narrative environment. The resulting datasets describe how actions within a story alter the structural conditions under which later events become possible.

The case study of Edgar Allan Poe's The Tell-Tale Heart illustrates how this observational framework can reveal patterns of systemic change within a narrative. The custodial intervention log identifies a sequence of actions through which the narrator repeatedly attempts to stabilize a perceived disturbance in the story world. These interventions progressively reshape the narrative environment, producing increasing custodial pressure and diminishing leverage for the protagonist. The resulting trajectory corresponds closely with the escalating tension that readers recognize in the story's structure.

The significance of the experiment lies less in the specific interpretation of Poe's narrative than in the methodological perspective it introduces. The PSCI apparatus produces a

structured observational record that allows systemic dynamics within a narrative to be examined alongside the text itself. These observations do not replace literary interpretation. Instead they provide a consistent framework through which the structural consequences of narrative actions can be explored.

Approaching narratives as systems evolving within a space of possibilities also opens new avenues for computational literary research. Stories can be examined not only as sequences of events or vehicles for thematic expression but as environments in which interventions expand or restrict the futures available within the story world. Analytical instruments capable of recording such transformations may therefore complement existing approaches in computational criticism and narrative theory.

The experiment also highlights a broader methodological issue associated with the use of generative AI in literary interpretation. Language models frequently converge toward a single explanatory synthesis when asked to analyze complex texts. While such responses can be fluent and persuasive, they may obscure the plurality of structural readings that literary scholarship routinely explores. The phasespace custodianship framework offers one way of addressing this difficulty by treating interpretation as an exploration of alternative structural trajectories within a narrative system.

The present study represents an initial step in a larger research program investigating the relationship between narrative structure and phasespace custodianship. Future work will apply the apparatus to a wider range of literary texts in order to examine whether recurring patterns of custodial intervention, systemic pressure, and structural transition appear across different narrative forms. Through such analyses the phasespace framework may provide literary scholars with a new vocabulary for describing how stories organize the conditions under which futures become available or disappear.

Works Cited

Abbott, H. P. (2008). *The Cambridge introduction to narrative* (2nd ed.). Cambridge University Press.

Blei, D. M. (2012). Probabilistic topic models. *Communications of the ACM*, 55(4), 77–84.

Butler, J. (1990). *Gender trouble: Feminism and the subversion of identity*. Routledge.

Dobson, T., Michura, P., Ruecker, S., Brown, M., & Rodriguez, O. (2011). Interactive visualizations of plot in fiction. *Visible Language*, 45(3), 169–191.

Doležel, L. (1998). *Heterocosmica: Fiction and possible worlds*. Johns Hopkins University Press.

Drucker, J. (2014). *Graphesis: Visual forms of knowledge production*. Harvard University Press.

Foucault, M. (1972). *The archaeology of knowledge*. Pantheon.

Hirschman, A. O. (1970). *Exit, voice, and loyalty: Responses to decline in firms, organizations, and states*. Harvard University Press.

Jameson, F. (1981). *The political unconscious: Narrative as a socially symbolic act*. Cornell University Press.

Jockers, M. L., & Mimno, D. (2013). Significant themes in nineteenth-century literature. *Poetics*, 41(6), 750–769.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer Publishing Company.

March, J. G., & Simon, H. A. (1958). *Organizations*. Wiley.

Mitchell, M. (2009). *Complexity: A guided tour*. Oxford University Press.

Poe, E. A. (2000). *The works of Edgar Allan Poe, Volume II* (Raven ed.). Project Gutenberg, eBook 2148. https://www.gutenberg.org/ebooks/2148

Pratt, M. L. (1977). *Toward a speech act theory of literary discourse*. Indiana University Press.

Ramsay, S. (2011). *Reading machines: Toward an algorithmic criticism*. University of Illinois Press.

Roberts-Smith, J., DeSouza-Coelho, S., Dobson, T., Gabriele, S., Rodriguez-Arenas, O., Ruecker, S., Sinclair, S., Akong, A., Bouchard, M., Jakacki, D., Lam, D., & Northam, L. (2013). Visualizing theatrical text: From watching the script to the simulated environment for theatre (SET). *Digital Humanities Quarterly*, 7(3).

Rockwell, G., & Sinclair, S. (2016). *Hermeneutica: Computer-assisted interpretation in the humanities*. MIT Press.

Ruecker, S., Sinclair, S., Dobson, T., Rockwell, G., & Radzikowska, M. (2014). The provision of digital apparatus for use in experimental interfaces. *Scholarly and Research Communication*, 5(4).

Ryan, M.-L. (1991). *Possible worlds, artificial intelligence, and narrative theory*. Indiana University Press.

Ryan, M.-L. (2006). *Avatars of story*. University of Minnesota Press.

Siemens, R., Warwick, C., Cunningham, R., Dobson, T., Galey, A., Ruecker, S., Schreibman, S., & INKE Research Group. (2009). Codex ultor: Toward a conceptual and theoretical foundation for new research on books and knowledge environments. *Digital Studies / Le champ numérique*, 1(2).

Underwood, T. (2019). *Distant horizons: Digital evidence and literary change*. University of Chicago Press.

Unsworth, J. (2000). Scholarly primitives: What methods do humanities researchers have in common, and how might our tools reflect this? Paper presented at the Symposium on Humanities Computing, King's College London.