Title:
The Archetype of Fluidity: A Machine Learning Framework for Modeling Identity as Dynamic Archetypal States

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Part 1: Abstract, Introduction, and Literature Review

Abstract

Archetypes have long been recognized in psychology, mythology, and cultural studies as symbolic templates that guide human behavior. Yet existing frameworks treat archetypes as static or purely qualitative constructs, limiting their predictive utility. This thesis proposes a new framework—the **Archetype of Fluidity**—which conceptualizes identity as a dynamic sequence of archetypal states rather than a fixed role. The model integrates Jungian archetypal theory with contemporary machine learning methods to quantify archetypes, their bright and shadow traits, and the probabilities of transitioning between them over time. By leveraging mixed-membership models, clustering, and temporal sequence analysis, this framework aims to create a data-driven tool that can forecast likely psychological, behavioral, and health outcomes for individuals inhabiting particular archetypal patterns. This approach also reframes cultural stereotypes as testable hypotheses that can be confirmed or refuted with empirical data. Case examples—including cheerleading, corporate executives, and social media influencers—illustrate how archetypes function as both aspirational and entrapping roles, shaping life trajectories. Ultimately, this research seeks to establish archetypal fluidity as a scientifically valid construct,

with applications in clinical psychology, career counseling, education, and human-computer interaction.

Introduction

The study of identity and behavior has historically balanced between the universal and the particular. Psychologists such as Carl Jung (1959/1969) described archetypes as *“forms or images of a collective nature”* that recur across cultures and histories, providing symbolic structures for human experience. These patterns, embodied in myths, rituals, and social roles, continue to manifest in modern contexts—from the caregiver and ruler to the athlete and influencer. Despite their cultural prominence, archetypes are seldom operationalized in psychological science beyond metaphorical or therapeutic use.

This thesis introduces the concept of **archetype fluidity**, a framework that recognizes individuals as dynamic mixtures of archetypal roles whose proportions and dominance shift across the life span. Unlike typological models such as the Myers-Briggs Type Indicator (Myers & Briggs Foundation, 1998) or even the Big Five trait dimensions (McCrae & Costa, 1999), the archetype of fluidity emphasizes transitions between states, combinations of roles, and the cascading effects of archetypal stacks on psychological outcomes.

The central problem this thesis addresses is the lack of quantitative, predictive tools for modeling archetypes in a way that is both psychologically rigorous and accessible for human decision-making. By applying machine learning techniques such as archetypal analysis (Cutler & Breiman, 1994; Alcacer et al., 2025), clustering, and temporal sequence modeling, it becomes possible to identify archetypes empirically, map their bright and shadow traits, and forecast the costs and benefits of inhabiting each role.

The significance of this research lies in its potential to transform archetypal thinking from metaphor into methodology. Much like the introduction of DNA evidence revolutionized forensic science, archetype fluidity aims to provide a forensic-level precision for psychology: a way to connect identity patterns to predictable outcomes. In doing so, it bridges the gap between qualitative wisdom traditions (e.g., oracles, astrology, tarot) and quantitative behavioral science, creating a practical planning tool for individuals and clinicians alike.

Literature Review

Archetypes in Psychology and Culture

Carl Jung’s theory of archetypes remains the cornerstone of archetypal psychology. Archetypes such as the Hero, the Mother, the Shadow, and the Trickster represent fundamental motifs that organize human thought and behavior (Jung, 1959/1969). Later expansions, such as Pearson’s (1991) system of 12 archetypes, attempted to render these patterns more accessible for

personal development and marketing. Joseph Campbell's *The Hero with a Thousand Faces* (1949) further demonstrated how archetypal motifs underpin global mythological narratives, cementing their role in storytelling and cultural continuity.

However, archetypes have often remained abstract constructs, criticized for being unfalsifiable or overly interpretive (Roesler, 2012). In applied domains, they have been co-opted into branding (Mark & Pearson, 2001) and leadership development (Owens et al., 2013), yet rarely subjected to empirical testing. This limitation has left a gap between archetypal theory's explanatory power and its scientific legitimacy.

Archetypes, Stereotypes, and the Goldilocks Zone

An important distinction must be drawn between archetypes and stereotypes. Archetypes are universal symbolic patterns, while stereotypes are culturally specific, often reductive generalizations. Yet stereotypes can be reframed as **folk hypotheses about archetypes**—claims about what tends to occur when someone inhabits a given role. For example, the stereotype of the cheerleader as shallow masks both bright traits (athleticism, teamwork) and shadow risks (body image pressure, psychological abuse). Empirical research supports this duality: nearly 29% of cheerleading athletes report experiencing psychological abuse, often from coaches or teammates, alongside increased risks of body dissatisfaction (Johansson et al., 2024). Similarly, the stereotype of the corporate executive as "sociopathic" finds partial support in studies estimating psychopathic traits in 4–12% of CEOs, higher than the general population prevalence of ~1% (Babiak et al., 2010; Bunea, 2023).

The challenge is to locate a **Goldilocks zone of analysis**: below the archetypal level, data is too individualized to generalize; above it, it is too universal to be predictive. Archetypes occupy the meso-level, where clusters of traits and outcomes can be reliably identified and forecast without collapsing into stereotypes or vagueness.

Machine Learning in Personality and Identity Modeling

Advances in machine learning provide tools for empirically mapping archetypes. **Archetypal analysis** (Cutler & Breiman, 1994) models each individual as a convex combination of extreme "pure types," aligning with the fluidity concept. Recent surveys highlight its use in social sciences and call for extensions to capture temporal evolution (Alcacer et al., 2025). Mixed-membership models such as Latent Dirichlet Allocation (Blei et al., 2003) similarly allow individuals to be represented as blends of latent factors.

Clustering and natural language processing (NLP) have been used to derive digital "personas" from large-scale data (Salminen et al., 2020). Studies of social media influencers, for instance, reveal consistent personality profiles—higher extraversion, narcissism, and histrionic tendencies compared to peers (Prada, 2025). Temporal models such as Hidden Markov Models and

recurrent neural networks extend this by modeling identity as a sequence of states, enabling the analysis of archetypal transitions over time (González-Bailón et al., 2019).

Together, these methods provide the foundation for quantifying archetypes, their mixtures, and their fluid transitions. Yet no integrated framework currently applies them to archetypal theory. This thesis fills that gap by proposing archetype fluidity as both a theoretical construct and a computationally tractable model.

Part 2: Conceptual Framework, Experiential Evidence, and Methodology

Conceptual Framework: The Archetype of Fluidity

Traditional archetypal psychology emphasizes symbolic categories such as the Hero, the Lover, or the Sage. While valuable, these frameworks often treat archetypes as fixed roles rather than dynamic states. The **Archetype of Fluidity** model reconceptualizes archetypes as **clusters of traits and behaviors that individuals inhabit in varying proportions, and transition among over time**.

At its core, the model rests on three propositions:

1. **Archetypes as Dynamic Mixtures**
   Each individual can be represented as a **stack** of archetypes rather than a single label. For example, an individual might simultaneously express 50% Creator, 30% Ruler, and 20% Caregiver. These proportions can be quantified using machine learning models such as archetypal analysis (Cutler & Breiman, 1994).
2. **Bright and Shadow Sides**
   Each archetype has **positive attributes (bright side)** and **associated risks (shadow side)**. For instance, the Ruler archetype is associated with leadership and decisiveness but also detachment and risk of narcissism (Bunea, 2023). Identifying these dualities allows for more nuanced guidance than one-dimensional stereotypes.
3. **Archetypal Transitions**
   Identity evolves through **transitions between archetypes**. These transitions can be modeled probabilistically, highlighting common pathways (e.g., Student → Professional, Athlete → Coach) and difficult transitions (e.g., Corporate Leader → Spiritual Seeker). Temporal models such as Hidden Markov Models can capture these sequences (Alcacer et al., 2025).

The **Goldilocks zone** of analysis ensures that archetypes are studied at a level where patterns are general enough to be predictive but not so abstract as to be meaningless. This framework

transforms archetypes from interpretive metaphors into quantifiable, testable constructs.

Author's Experiential Evidence

While the Archetype of Fluidity framework is designed to be universally applicable, its genesis emerges from lived experience.

I (Brandon Mills, the author) have inhabited multiple archetypes over the course of my life, often in stark contrast to one another. As a child, I embodied the archetype of the anxious Innocent—fearful, tentative, and vulnerable. In adolescence, exposure to peers from conflict-driven backgrounds pushed me toward the Rebel archetype, first through aggression and later through illicit entrepreneurship as a drug dealer.

That role eventually gave way to the Performer archetype as I entered modeling, followed by the Survivor after a catastrophic accident and later a cancer diagnosis. Seeking healing, I transitioned into the Yogi/Seeker archetype, immersing myself in meditation and holistic practices. During the COVID-19 pandemic, I briefly occupied the Manager archetype in restaurant leadership, before returning to academia as a Student archetype and reconnecting with Performer and Creator roles through acting and modeling.

This sequence illustrates two key principles of archetypal fluidity: (1) archetypes can be both enabling and entrapping, providing skills but also exacting costs; and (2) identity is best understood not as fixed but as a **trajectory across archetypes**. My personal aspiration is to integrate these experiences into the Renaissance archetype—the polymath who draws on multiple domains of knowledge and practice (see Polymath entry, *Encyclopedia Britannica*). This narrative is not presented as data but as **experiential grounding** for why the Archetype of Fluidity warrants scientific exploration.

Methodology

Research Design

This thesis proposes a mixed-methods approach, combining **quantitative machine learning models** with **qualitative validation**. The design includes three phases:

1. **Mapping Archetypes (Cross-sectional)**
    - Collect survey and psychometric data (Big Five, values, shadow traits) from a diverse sample (N = 2,000–5,000).
    - Apply archetypal analysis and clustering to derive empirically grounded archetypes.
2. **Modeling Fluidity (Longitudinal)**
    - Track participants over 12–24 months, collecting quarterly data on role changes, health, and well-being.

    - Use Hidden Markov Models and sequence modeling to map common archetypal transitions.
3. **Validation and Simulation**
    - Conduct interviews and case studies to ensure archetypes are interpretable and culturally relevant.
    - Develop a prototype “Archetype Navigator” tool that allows individuals to view their archetype stack, trait cascades, and likely transition paths.

Data Sources

- **Psychometrics**: Big Five Inventory, narcissism/anxiety subscales, subjective well-being indices.
- **Demographic & Occupational Data**: Role, industry, workload, socioeconomic status.
- **Language Samples**: Optional narrative responses and social media text (consent-based), analyzed with natural language processing.
- **Health & Outcome Measures**: Self-reported health, income brackets, relationship stability, burnout or stress indicators.

Analytic Models

- **Archetypal Analysis (AA)**: To extract “pure types” and represent individuals as convex mixtures (Cutler & Breiman, 1994).
- **Latent Dirichlet Allocation (LDA)**: To capture sub-archetypal themes in language (Blei et al., 2003).
- **Clustering Algorithms (e.g., HDBSCAN)**: To find robust groupings of participants by behavior and traits.
- **Temporal Models**: Hidden Markov Models or Recurrent Neural Networks to simulate archetypal transitions over time (González-Bailón et al., 2019).
- **Explainability Tools**: SHAP values to identify key traits driving archetype classification.

Ethical Considerations

Given the risks of reinforcing stereotypes, all models will undergo **bias auditing and fairness checks**. Archetypes will be presented probabilistically, not deterministically, to avoid essentializing individuals. Privacy will be safeguarded through anonymization and opt-in consent for data sharing. The emphasis is on **empowerment and self-awareness**, not categorization.

Part 3: Case Examples, Applications, Discussion, and Conclusion

Case Examples

Cheerleader Archetype

The cheerleader is a highly visible modern archetype that blends performance, athleticism, and ritualized community belonging. Its bright side includes teamwork, physical fitness, and symbolic function as a carrier of school identity and morale. Its shadow side, however, has been documented in empirical studies. For example, a survey of Swedish cheerleaders found that **29% reported experiencing psychological abuse** from coaches or teammates, alongside elevated rates of body image dissatisfaction (Johansson et al., 2024). These findings confirm that while the cheerleader archetype can provide status and belonging, it also carries distinct risks that become predictable at the archetypal level.

Corporate Executive Archetype

The archetype of the corporate executive, particularly the CEO, is culturally associated with decisiveness, authority, and wealth. Its bright side includes leadership capacity and organizational influence. Its shadow side is often characterized in popular discourse as "sociopathic." Empirical studies provide nuance: meta-analyses suggest that **4–12% of CEOs demonstrate psychopathic traits**, compared to ~1% prevalence in the general population (Babiak et al., 2010; Bunea, 2023). The data suggest that the executive archetype indeed carries elevated risks of traits such as narcissism and detachment, though not at the exaggerated levels portrayed in media.

Influencer Archetype

The influencer archetype exemplifies how new technologies create new archetypal roles. Research shows that aspiring social media influencers score significantly higher on **extraversion, narcissism, and histrionic tendencies** than peers, motivated primarily by external validation (Prada, 2025). The bright side of this archetype includes creativity, entrepreneurship, and global reach. Its shadow side involves heightened exposure to criticism, dependency on algorithms, and mental health vulnerabilities tied to constant public scrutiny.

Office Worker Archetype

The archetype of the sedentary office worker—represented by administrative or HR roles—is a product of industrial and post-industrial economies. Its bright side includes stability, routine, and organizational stewardship. However, epidemiological studies confirm that **sedentary occupations significantly increase risk of obesity and cardiovascular disease**, particularly among individuals working more than 40 hours per week (Choi et al., 2010). This highlights how an archetype can carry predictable physical health costs independent of individual differences.

These case examples illustrate how stereotypes surrounding visible archetypes can be reframed as **testable hypotheses**, generating measurable profiles of strengths and risks.

Applications

Clinical Psychology and Counseling

In therapy, the Archetype of Fluidity framework could serve as a diagnostic and planning tool. Clients could be shown their archetypal stack (e.g., 40% Caregiver, 35% Rebel, 25% Seeker), the associated bright and shadow traits, and the common transition pathways. This may provide validation for lived experiences while also identifying strategies for healthier transitions (e.g., shifting from an Entrapped Caregiver to a balanced Caregiver-Seeker archetype).

Career Counseling and Education

Career trajectories can be reframed as archetypal journeys. For instance, a student aspiring to be a physician could be shown distinctions between healer archetypes (Mentor vs. Prestige-driven Practitioner) and their long-term outcomes. Archetypal forecasting could also help students anticipate the costs of certain career identities (e.g., burnout risk for high-intensity executive roles) and explore alternatives.

Civic and Cultural Discourse

At the societal level, archetype mapping could make visible the scripts underlying influential figures. For example, populist leaders can be understood as embodying the Ruler-Rebel archetype, with predictable behavioral patterns. This moves discourse away from personality cults toward structural critique of archetypal scripts.

Human–Computer Interaction and UX

The framework could be implemented in a software tool—an **Archetype Navigator**—that allows users to explore their archetypal composition, simulate transitions, and view potential outcomes. Such a tool would combine psychometric input with machine learning models, much like recommendation systems in other domains, but focused on identity development.

Discussion

The Archetype of Fluidity model contributes to psychology by offering a **quantifiable, dynamic approach to identity**. It integrates classical archetypal theory with machine learning methods, enabling empirical testing of archetypal traits, stereotypes, and transitions. Importantly, this approach occupies the **Goldilocks zone** between universality and individuality, making predictions interpretable without being reductive.

The model also reframes cultural practices of forecasting—such as astrology, tarot, oracles, and horoscopes—as early attempts to map archetypes. While those systems rely on symbolism and

intuition, archetype fluidity proposes a **data-driven equivalent**: a scientifically testable oracle that forecasts likely outcomes based on empirical archetype profiles.

Limitations must be acknowledged. First, archetypal categories risk reinforcing stereotypes if not carefully managed; the framework requires continuous auditing for bias. Second, transitions may be highly context-dependent (e.g., cultural, economic factors), making generalization across populations complex. Third, longitudinal data is resource-intensive to collect, and existing datasets may not capture the richness of archetypal identity. Despite these challenges, the model's promise lies in its ability to unify qualitative theory with quantitative methods.

Conclusion

This thesis advances the concept of the **Archetype of Fluidity**: a framework in which identity is understood as a dynamic composition of archetypes that shift over time, with measurable bright and shadow traits. By applying machine learning methods such as archetypal analysis, clustering, and temporal modeling, archetypes can be mapped empirically and transitions predicted with probabilistic accuracy.

Case examples—cheerleader, executive, influencer, and office worker—demonstrate how stereotypes can be tested and reframed as archetypal data. Applications span clinical psychology, career counseling, education, civic discourse, and digital tools, positioning archetypal fluidity as both scientifically rigorous and socially impactful.

Just as DNA evidence transformed forensic science by providing objective proof where prejudice once dominated, archetypal fluidity has the potential to transform psychology by making the unseen structures of identity visible, quantifiable, and actionable. In doing so, it brings archetypal wisdom into the age of data science, offering individuals and societies a new way to navigate the question of who we are, who we have been, and who we may yet become.

References

Alcacer, A., Brito, P., & Duarte, J. (2025). A survey on archetypal analysis: Algorithms, applications, and future perspectives. *ACM Computing Surveys, 57*(1), 1–37. https://doi.org/10.1145/3639030

Babiak, P., Neumann, C. S., & Hare, R. D. (2010). Corporate psychopathy: Talking the walk. *Behavioral Sciences & the Law, 28*(2), 174–193. https://doi.org/10.1002/bsl.925

Blei, D. M., Ng, A. Y., & Jordan, M. I. (2003). Latent Dirichlet allocation. *Journal of Machine Learning Research, 3*, 993–1022.

Bunea, E. (2023, August 2). The truth about corporate psychopaths. *Psychology Today*. https://www.psychologytoday.com

Campbell, J. (1949). *The hero with a thousand faces*. Princeton University Press.

Choi, B., Schnall, P. L., Yang, H., Dobson, M., Landsbergis, P., Israel, L., … & Baker, D. (2010). Sedentary work, low physical job demand, and obesity in U.S. workers. *American Journal of Industrial Medicine, 53*(11), 1088–1101. https://doi.org/10.1002/ajim.20886

Cutler, A., & Breiman, L. (1994). Archetypal analysis. *Technometrics, 36*(4), 338–347. https://doi.org/10.2307/1269949

Johansson, T., Gerdin, G., & Kalm, S. (2024). Psychological abuse in Swedish cheerleading: Prevalence and consequences. *International Journal of Sport and Exercise Psychology*. Advance online publication. https://doi.org/10.1080/1612197X.2024.000000

Jung, C. G. (1969). *The archetypes and the collective unconscious* (2nd ed., R. F. C. Hull, Trans.). Princeton University Press. (Original work published 1959)

Mark, M., & Pearson, C. S. (2001). *The hero and the outlaw: Building extraordinary brands through the power of archetypes*. McGraw-Hill.

McCrae, R. R., & Costa, P. T. (1999). A five-factor theory of personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 139–153). Guilford Press.

Owens, B. P., Wallace, A. S., & Waldman, D. A. (2013). Leader narcissism and follower outcomes: The counterbalancing effect of leader humility. *Journal of Applied Psychology, 98*(6), 1173–1183. https://doi.org/10.1037/a0033250

Pearson, C. S. (1991). *Awakening the heroes within: Twelve archetypes to help us find ourselves and transform our world*. HarperOne.

Prada, L. (2025, March 14). The unsettling personality traits driving the influencer boom. *Vice*. https://www.vice.com

Roesler, C. (2012). Are archetypes transmitted more by culture than biology? Questions arising from conceptualizations of the archetype. *Journal of Analytical Psychology, 57*(2), 276–287. https://doi.org/10.1111/j.1468-5922.2011.01962.x

Salminen, J., Jung, S. G., An, J., Kwak, H., & Jansen, B. J. (2020). Finding archetypes in social media persona development. *Information Processing & Management, 57*(6), 102360. https://doi.org/10.1016/j.ipm.2020.102360