Information Sciences with Applications, Vol. 7, 2025
https://doi.org/10.61356/j.iswa.2025.7585

Neutrosophic Social Evolution: Degrees of Evolution, Indeterminacy, and Involution

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Abstract: The idea of social evolution has been a core component of sociological thought for centuries, influencing our understanding of societal development, transformation, and the factors that drive social change. Traditional approaches, such as those proposed by Talcott Parsons and Herbert Spencer, emphasize linear processes of development and improvement in society. However, these perspectives often fail to capture the complexity and ambiguity inherent in modern social dynamics. Neutrosophic Social Evolution, as a refinement of these earlier theories, introduces a more nuanced framework that incorporates the roles of evolution, involution, and indeterminacy in the ongoing development of societies. This approach recognizes that social change is not merely a progression toward an ideal state but involves a dynamic interplay of multiple forces, leading to varied outcomes depending on the parameters being considered.

Keywords: Neutrosophic Sociology, Neutrosophic Probability, Indeterminacy, Neutrosophic Social Systems, Neutrosophic Social Evolution, Social Phenomena, Social Change, Sociological Forecasting, Social Norms, Sociological Triads, Social Complexity, Social Data, Dynamic Social Systems.

1. Extending the Process of Evolution: The Dialectic vs. Neutrosophic Approach

At the heart of traditional dialectical models of social change, such as Marxist theory,[1] is the understanding that social evolution unfolds through the interaction of opposites—typically framed as thesis and antithesis—that resolve into a synthesis.[2] This dialectic implies a clear and linear progression: societal structures evolve through conflict and contradiction, gradually advancing toward a new, more developed state. [1] For example, in Marxism, the transition from feudalism to capitalism, and later from capitalism to socialism, is seen as a natural evolutionary trajectory driven by inherent contradictions in the system [3].

In contrast, Neutrosophy introduces a more complex understanding of evolution. Rather than focusing solely on the binary opposition between [A] (thesis) and [antiA] (antithesis), Neutrosophic Evolution proposes a broader process of development, characterized by degrees of evolution, involution, and indeterminacy—each of which can influence societal change depending on the parameters under consideration [5, 6].

1.1. Degree of Evolution

This refers to the extent to which a society progresses or transforms in a positive direction with respect to certain social parameters (such as economic growth, technological advancement, or political stability).

[1] Wilterdink, Nico and Form, William. "social change". *Encyclopedia Britannica*, 16 Dec. 2024, https://www.britannica.com/topic/social-change. Accessed 10 February 2025.

[2] Maybee, Julie E., "Hegel's Dialectics", *The Stanford Encyclopedia of Philosophy* (Winter 2020 Edition), Edward N. Zalta (ed.), https://plato.stanford.edu/archives/win2020/entries/hegel-dialectics. Accessed 10 February 2025.

1.2. Degree of Involution

This represents the potential regression or deterioration of certain aspects of society, where certain social parameters (such as cultural values, environmental sustainability, or public health) may decline or experience setbacks.

1.3. Degree of Indeterminacy

This indicates areas where change is neither clearly progressive nor regressive. These ambiguous spaces reflect social parameters that remain neutral or unclear in their evolution, remaining unchanged or in a state of flux without a clear direction.

Thus, Neutrosophic Social Evolution moves beyond the simplistic linearity of traditional evolution, offering a framework that acknowledges the multifaceted nature of social change and the presence of neutral or indeterminate states that complicate our understanding of progress.

2. Neutrosophic Social Evolution: Theory and Application

Talcott Parsons[3] proposed the idea of social evolution, focusing on the adaptation and functional integration of social systems. Parsons believed that societies evolve by adapting to new challenges, increasing in complexity, and moving toward greater social order. However, this view has been critiqued for overemphasizing the positive aspects of social evolution and neglecting the presence of social problems that persist or even worsen over time. C. Wright Mills[4] criticized the idea of "the survival of the fittest societies," [4] emphasizing the persistence of social inequalities and issues such as poverty, oppression, and conflict, which seem to resist resolution.[5]

Building upon these critiques, Neutrosophic Social Evolution introduces a more nuanced perspective that acknowledges both the potential for positive transformation and the reality of persistent problems in society. This framework suggests that social change does not simply result in continuous improvement, as Parsons have envisioned, but rather involves a combination of evolutionary advancements, involutionary regressions, and indeterminate states.

In practice, Neutrosophic Social Evolution requires that we consider a multitude of social parameters—economic, technological, cultural, political, and environmental—that interact in complex ways. These parameters evolve at different rates and in different directions. For instance, while a society may experience technological advancements, such as the development of the internet or mobile devices, these advancements may simultaneously create new forms of social problems, such as cybercrime, online bullying, or privacy concerns [7].

Thus, social change is not purely positive; it involves a complex balancing act between progress, regression, and uncertainty.

3. The Impact of Technology on Social Evolution: A Neutrosophic Perspective

One of the clearest examples of Neutrosophic Social Evolution can be seen in the role that technology plays in shaping contemporary society. The advent of the internet and mobile technology has transformed communication, commerce, education, and social interaction in ways that could not have been anticipated a few decades ago. These changes demonstrate the multi-dimensional nature of social evolution, where progress in one area can simultaneously lead to challenges in another.

3.1. Social Evolution

Technology has facilitated faster and more efficient communication, making it easier for people to connect across vast distances. Innovations like distance education (e-learning), e-commerce, and telecommuting have transformed how we work and learn, creating new opportunities for economic

[3] Britannica, The Editors of Encyclopaedia. "Talcott Parsons". *Encyclopedia Britannica*, 9 Dec. 2024, https://www.britannica.com/biography/Talcott-Parsons. Accessed 10 February 2025.
[4] Britannica, The Editors of Encyclopaedia. "C. Wright Mills". *Encyclopedia Britannica*, 24 Aug. 2024, https://www.britannica.com/biography/C-Wright-Mills. Accessed 10 February 2025.
[5] John D Brewer (2004). "Imagining *The Sociological Imagination*: The Biographical Context of a Sociological Classic," *British Journal of Sociology* 55:3, 319–333.

participation and access to information. The internet has also made it possible to form new types of social networks and communities, bringing people together based on shared interests and goals, regardless of geographic location.

3.2. Social Involution

However, the rapid proliferation of technology has also led to unintended negative consequences. The erosion of privacy, due to widespread surveillance and data collection, has become a major social issue. Cybercrimes, such as identity theft, online fraud, and hacking, have created new challenges for individuals and governments alike. Additionally, the over-reliance on mobile devices and the internet has been linked to social isolation, mental health issues, and addiction, particularly among younger populations. Technology, while enabling greater social interaction in some respects, has also contributed to the breakdown of traditional forms of community and social cohesion [2].

3.3. Indeterminacy (Neutral or Unchanged Aspects)

Despite the many changes brought about by technology, some aspects of human life remain unchanged. People still form friendships, experience conflicts, and seek meaning and purpose in their lives. Technology has not fundamentally altered the nature of human relationships or the basic patterns of social interaction—people still engage in leisure activities, vacation, work, and play in largely similar ways, even if these activities are increasingly mediated by digital technologies.

This illustrates the Neutrosophic nature of social change, where technology simultaneously drives evolution, involution, and indeterminacy across different dimensions of society. The society's relationship with technology is far from straightforward; it is marked by progress in some areas, regression in others, and neutrality or ambiguity in yet others.

4. Refined Neutrosophic Evolution

To better capture the complexity of social evolution, Neutrosophic Social Evolution introduces the concept of Refined Neutrosophic Evolution, which further elaborates on the degrees of evolution, involution, and indeterminacy that can manifest in any given society. This refined model introduces multiple levels of analysis for each social parameter, allowing for a more granular understanding of social change.

For example, a social change may lead to varying degrees of evolution (T_1, T_2, T_3, …) in one set of social parameters, while resulting in degrees of involution (F_1, F_2, F_3, …) in another. In some areas, changes may remain neutral (I_1, I_2, I_3, …), reflecting no significant transformation in the *status quo*, while in others, the outcome may be uncertain or unclear ($I(n+1)$, $I(n+2)$, …), reflecting the indeterminate nature of social forces.

This refined approach allows us to better understand the multiplicity of factors at play in any social change, moving beyond simplistic dichotomies of progress vs. regression.

5. Conclusion and Future Work

Neutrosophic Social Evolution offers a sophisticated and nuanced framework for understanding the dynamics of societal change. By incorporating degrees of evolution, involution, and indeterminacy, this approach accounts for the complexity and unpredictability of social processes. It recognizes that social change is rarely a straightforward, linear progression toward an ideal state; instead, it is marked by conflicting and balancing forces that drive society forward, backward, and sometimes leave it in an ambiguous, neutral space.

Declarations

Ethics Approval and Consent to Participate

The results/data/figures in this manuscript have not been published elsewhere, nor are they under consideration by another publisher. All the material is owned by the authors, and/or no permissions are required.

Consent for Publication

This article does not contain any studies with human participants or animals performed by any of the authors.

Availability of Data and Materials

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Competing Interests

The authors declare no competing interests in the research.

Funding

This research was not supported by any funding agency or institute.

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[3] Manifesto of the Communist Party by Karl Marx and Frederick Engels (February 1848), in Marxist Internet Archive: https://www.marxists.org/archive/marx/works/download/pdf/Manifesto.pdf.

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Received: 04 Dec 2024, **Revised:** 15 Feb 2025,

Accepted: 21 Aug 2025, **Available online:** 23 Aug 2025.