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[JULIANO FLAVIO RODRIGUES](#)^{*} and Gerardo Araújo Filho

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Article

Alzheimer's Disease and Suicide Associating (ASA) Theory

Juliano Flávio Rubatino Rodrigues^{1,2,3,4,*} and Gerardo Maria de Araújo Filho¹

¹ Faculdade de Medicina de São José do Rio Preto (FAMERP), São José do Rio Preto, SP, Brazil

² Faculdade de Medicina de Marília (FAMEMA), Marília, SP, Brazil

³ Unimed Bauru Cooperativa de Trabalho Médico, Bauru, SP, Brazil

⁴ Lifetime Member of International Psychogeriatric Association (IPA), Milwaukee, WI, USA

* Correspondence: julianofr@terra.com.br; Tel.: 14-3433-9673

[†] Current address: Rua Dr. Augusto Barreto, 441 – Bairro Jardim Maria Izabel – Marília – SP/Brazil
CEP: 17.516-033.

Abstract: Alzheimer's disease still holds many mysteries that are yet to be revealed. Exploring the reasons behind the increase in suicidal behavior in patients undergoing promising treatments for Alzheimer's disease is a scientific endeavor. Research practices must be built upon strong theoretical frameworks that can guide the investigation. Throughout decades of professional experience in caring for suicidal individuals and elderly people with cognitive disorders, we have noticed a connection that requires further exploration. It seems that existential distress may trigger various outcomes. At one end of the spectrum, we observe individuals who strongly resist adverse situations, making them more prone to developing suicidal behaviors. At the other end, we see individuals who exert great biological effort to adapt to the ongoing stresses of life, with Alzheimer's disease being a neurological consequence of this adaptation. To develop our understanding, we conducted an existentialist analysis to conceptualize the underpinnings of the human experience in a stress-filled world.

Keywords: Alzheimer's disease; suicide; theory

I. Introduction

Alzheimer's disease was observed by a psychiatrist when he noticed behavioral changes in one of his patients (Stelzmann, Schnitzlein, and Murtagh 1995). With the discovery of the disease's neurodegenerative changes, the topic became of broad neurological interest. In the last century, Alzheimer's disease has been one of the most studied diseases. The documentation of amyloid- β and tau protein in the pathophysiology of the disease is very well established.

In the search for appropriate strategies to prevent cognitive decline, many risk factors have been identified, including depression as a preventable illness (Mizukami 2013). Depression is an illness related to prolonged emotional stress. Stress promotes a cascade of hormonal, neuroendocrine, and epigenetic changes that lead to the hypofunction of neuronal receptors and a drop in neurotransmitters, such as serotonin.

II. Commonalities between Alzheimer Disease and Suicide

Some of the neuroendocrine mechanisms that can lead to Alzheimer's disease have been linked to suicidal behavior. One is the hyperactivity of glycogen synthase kinase 3 β (GSK-3 β) (McCallum and Perreault 2021). GSK-3 β promotes phosphorylation of the tau protein. In stressful situations, activation of the adrenal pituitary axis releases large amounts of glucocorticoids. GSK-3 β upon receiving the influx of increased glucocorticoid triggers the hyperphosphorylation of tau protein. Phosphorus competes with microtubules for binding to the tau protein, promoting destabilization of the neuronal transport system, atrophy, and cell death.

Cell death is the end of a process that originates from existential malaise. Byung-Chu Han (Han 2015) alerts us to the neuronal violence we are experiencing: *"From a pathological standpoint, the*

incipient twenty-first century is determined neither by bacteria nor by viruses, but by neurons. Neurological illnesses such as depression, attention deficit hyperactivity disorder (ADHD), borderline personality disorder (BPD), and burnout syndrome mark the landscape of pathology at the beginning of the twenty-first century.”¹

In today’s world, people are navigating intense interpersonal tensions. In the past, individuals used to have the time to process grief and other losses. However, with the modern emphasis on productivity, people often struggle to find time for self-reflection and personal growth. This constant need to navigate a challenging world encourages various neurobiological adaptive responses. Could this pursuit of homeostasis lead to any adverse consequences?

III. ASA Theory

The impact of stress can propel individuals to demonstrate extreme adaptive responses, reminiscent of the fight or flight reaction. On one end of the spectrum, individuals may endeavor to break free from stress, which regrettably can lead to suicidal tendencies. On the other end, individuals may embrace an intense struggle against stress. We are dedicated to understanding the behavioral characteristics associated with this intense struggle against stress.

Desensitization mechanisms are the body’s most used methods to cope with a constant stimulus. Could the process of anesthetizing physical pain have any parallels with psychic pain? What could be the most appropriate mechanism for numbing psychic pain?

Psychic pain was called psychache by the father of suicidology (Shneidman 1993). Edwin Shneidman identified psychache as the trigger for suicide. Suicide is the extreme escape from psychic pain. However, what would be the extreme of persistence in the fight against psychic pain?

To seek to understand the desensitization mechanisms of psychache, we need to advance our understanding of existential malaise. First of all, it is essential to remember the importance of perception of time to the Being. To be able to memorize events is fundamental for Dasein of the being-in-the-world. Heidegger said in part one of Being and Time (Heidegger 1962): *“The Being of any such entity is in each case mine. [...] Being is that which is an issue for every such entity. This way of characterizing Dasein has a double consequence:*

- I. *The ‘essence’ [“Wesen”] of this entity lies in its “to be” [Zu-sein]. [...]*
- II. *That Being which is an issue for this entity in its very Being, is in each case mine. [...]*²

In part two of Being and Time he said: *“But the primordial ontological basis for Dasein’s existentiality is temporality. In terms of temporality, the articulated structural totality of Dasein’s Being as care first becomes existentially intelligible. The Interpretation of the meaning of Dasein’s Being cannot stop with this demonstration. The existential-temporal analysis of this entity needs to be confirmed concretely. [...]*

If temporality makes up the primordial meaning of Dasein’s Being, and if moreover this entity is one for which, in its Being, this very Being is an issue, then care must use ‘time’ and therefore must reckon with ‘time’. ‘Time-reckoning’ is developed by Dasein’s temporality. The ‘time’ which is experienced in such reckoning is that phenomenal aspect of temporality which is closest to us. Out of it arises the ordinary everyday understanding of time. And this understanding evolves into the traditional conception of time.

By casting light on the source of the ‘time’ ‘in which’ entities within-the-world are encountered - time as “within-time-ness” - we shall make manifest an essential possibility of the temporalizing of temporality. Therewith the understanding prepares itself for an even more primordial temporalizing of temporality. In this is grounded that understanding of Being which is constitutive for the Being of Dasein. Within the horizon of time the projection of a meaning of Being in general can be accomplished. [...]

³

¹ Han, 2015 on page 1 of The burnout society.

² Heidegger, 1962 on page 67 of Sein und Zeit.

³ Heidegger, 1962 on pages 277-8 of Sein und Zeit

It could be understood that Being is only possible with the perception of time. However, Timeaus' explanation (Plato 1997) improves this knowledge with distinction between Being and Becoming. Existence would not directly be Being, since this is the original and intelligible point. The Becoming is intelligible and accessible. The correct understand is that Becoming or Existence are possible with the perception of time.

Existence itself can be an extreme burden when faced face to face as a being-towards-death in the absurdity of having to live a life doomed to death (Camus 1955). Psychic pain can be present at this time until death (Heidegger 1962). Thus, perceiving time is directly linked to pain. Time perception is one of the cognitive functions. Is there any way for humans to destroy their perception of time to desensitize psychache?

The Time Perception:

The lack of time perception is common in cognitive disorders among the elderly, where Alzheimer's disease is its biggest representative. There were fertile times in phenomenological discourses, however Alzheimer's disease was little known in 1913 when Karl Jaspers published his General Psychopathology (Jaspers 1997). Even so, we can find in the second session of the first chapter of the first part of the description of the "Experience of Space and Time". He outlined three distinct categories of time perception:

"1. Knowledge of time. This relates to objective time and the performance of judging time-intervals rightly or wrongly. [...]"

2. Experience of time. The subjective experience of time is not the estimation of any particular span of time but a total awareness of time [...]"

3. Handling of time. Everyone has to handle the basic fact of time. [...]"

In addition to the three above lines of enquiry, we are left finally with the biological problem of the time-hound nature of life, including psychic life. [...]"⁴

Jaspers explains that time perception processes interact with consciousness: "The following points are material when we come to discuss the phenomena of the experience of time: Knowledge of time (and actual orientation in time) takes place on the basis of our experience of time but it is not the experience of time itself. Our experience of time involves a basic awareness of the constancy of our existence; without this constancy in time there can be no consciousness of time passing. Consciousness of time passing is an experience of basic continuity [...]. Experience of time is also an experience of having a direction, a growing forward, in which the awareness of the present stands as a reality between the past as memory and the future as planned. Finally there is the experience in time of timelessness, of Being as the eternal present, as the transcendence of all becoming. [...]"⁵

He described the momentary awareness of time and pathological changes in time perception such as lost awareness of time and loss of reality in the time experience. In individuals with prodromal Alzheimer's disease, certain symptoms of temporal distortion, such as imprecision and overestimation of time, may manifest (Pai, Yang, and Fan 2021). In more advanced stages of the disease, there is a total loss of perception of Becoming (El Haj and Kapogiannis 2016).

Not-to-Be:

Human existence is a constant Becoming. Not wanting to continue Becoming is wanting not to exist. The suicidal possibility as a quest to eradicate Becoming is easily understandable. This is the path of total non-acceptance of existential malaise. However, existential malaise can generate countless adaptive attempts to deal with Becoming.

Resilience must take its toll. Enduring existential stress is done at the expense of endocrine, epigenetic changes, and other homeostatic attempts. All of them would seek to better deal with the discomfort of Becoming. The destruction of the perception of time can be understood as beneficial to stop the malaise of Becoming.

Alzheimer's disease as a suicide equivalent – ASA Theory insight:

⁴ Jasper, 1997 on page 82 of General Psychopathology

⁵ Jasper, 1997 on page 83 of General Psychopathology

Cognitive impairments in Alzheimer's disease promote a cessation of the perception of the passage of time. Living only with memories of the past, without storing the present to move towards a Becoming. To annihilate Becoming is to annihilate existence.

Annihilating existence seems to be the meeting point between suicide and Alzheimer's Disease. Therefore, we propose the Alzheimer's Disease and Suicide Associating (ASA) Theory: Stress promotes a series of organic responses to adapt - the GAS, proposed by Hans Selye (Selye 1950). Long-term maintenance of stressful conditions can lead to various diseases. In the case of Alzheimer's Disease, the adaptive attempt seeks to reduce the overload of pathological stimuli through a neuronal braking mechanism with the accumulation of amyloid beta and tau protein. Alzheimer's disease may represent a failed attempt to adapt to the existential malaise. Attempting to alleviate the pain of existential suffering could lead to cognitive deterioration. Suicide is a total non-acceptance of the adversity caused by a stressful situation. Both conditions end up annihilating the existential cognitive condition, described as "Not to be".

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