MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master‘s Thesis

Assisted Suicide in Austria: An Enactivist Analysis of the Attitudes, Experiences, and Support Needs of Palliative Care Nurses

verfasst von / submitted by

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angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of
Master of Science (MSc)

Wien, 2023 / Vienna, 2023

Studienkennzahl lt. Studienblatt / degree programme code as it appears on the student record sheet:	UA 066 013
Studienrichtung lt. Studienblatt / degree programme as it appears on the student record sheet:	Masterstudium Joint Degree Programme MEi:CogSci Cognitive Science
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Abstract

*English Version**

Assisted suicide (AS) has increasingly gained popularity worldwide as a medical option for patients suffering from a terminal illness. Since its legalization and implementation in Austria in January 2022, no study has investigated the status of the rollout procedure. Addressing the attitudes, experiences, and needs of the affected staff is critically important for many reasons including the smooth integration and acceptance of the controversial law, and the longitudinal assessment of national progress over time. In the present study, the enactivist theory of mind – an emerging paradigm in the field of cognitive sciences – was used as a framework with which to explain findings and provide suggestions for the future of AS in Austria. Nurses in palliative and hospice care, having a highly involved yet unclearly defined role, were targeted in this explorative, cross-sectional study through a questionnaire dispersed to every relevant care organization in Austria. Most prominent findings include the widespread but overall supportive stance of nurses toward AS, the desire for increased collaboration and clarity on the processes of AS, and the personal concerns held for various aspects of the process overall (I.e., effect on patient wellbeing, future developments and responsibilities, lack of resources, etc.). Core principles of enactivism provide an interpretation of results, followed by substantiated suggestions to increase resources, opportunities, and communication to nurses. Such interventions will be important for the improvement of nurses' circumstances and the future use of AS in Austria.

**A German version of the abstract can be found in the Appendix of this paper.*

1. Introduction

Introduction to Assisted Suicide

1.1. General Overview

1.1.1. What is Assisted Suicide?

Physician-assisted suicide (AS) is a medical procedure in which patients deemed eligible by physicians are able to make the choice to end their own life with the use of medication (Mehlum et al., 2020). This process is tightly regulated and executed within the context of palliative care medicine, an interdisciplinary field of medicine dedicated specifically to bettering the quality of life and comfort of patients with long-term, chronic, or serious illness. As palliative care is aimed at mitigate suffering, medical suicide has increasingly gained support as an accepted medical option to achieve such goal (Cayetano-Penman et al., 2021; Emanuel et al., 2016; Inghelbrecht et al., 2009; Lynøe et al., 2021; Richardson, 2023; Sellars et al., 2021). The debate surrounding the legalization of AS involves many ethical considerations and is consequently very complicated when entering the medical and public discourse, as it involves legally defining the nature and ownership over a person's life. As a result, the decision to legalize such practice is only one initial step in navigating this ethical grey-zone, after which each country must define the intricacies of its own legal system.

In the last decades, many countries have legalized the practice of AS (or a comparable practice referred to by a different name) in their medical systems, including Switzerland, Belgium, the Netherlands, Spain, nine US states, Canada, New Zealand, parts of Australia, and more (Dyson, 2021; Emanuel et al., 2016; Mehlum et al., 2020; Richardson, 2023). Country-specific details such as inclusion criteria, medical assessment regulations, timelines, age restrictions, method of administration and more are all decided upon independently, and ultimately result in a wide variety of AS implementation practices (Mehlum et al., 2020).

For example, some countries maintain a distinct legal differentiation between the practices of AS and euthanasia, whereas others do not (Mehlum et al., 2020; Richardson, 2023). The technical difference here lies in the act of physical administration itself; *Euthanasia* occurs when "the physician acts directly to end the patient's life, e.g., by giving a lethal injection"

(Mehlum et al., 2020, p. 2). However, in *AS*, the physician only provides the instructions and means to complete the procedure, while the life-ending act itself must be performed by the patient or legal caregiver. Switzerland, Australia, and the US have all legalized AS but not euthanasia, for example, whereas others like Belgium, the Netherlands, and Colombia do not differentiate legally between the two (Mehlum et al., 2020; Richardson, 2023). Though at first glance such intricacies may appear to have only miniscule distinctions, in some countries this is the difference of morality and consequently, legality.

Such a distinction is one example of the many considerations medical systems must face when legalizing AS. Another critical aspect for countries to consider lies in defining the inclusion criteria for interested patients, namely identifying what qualities must be present or absent in the patient's situation to qualify them for AS. Many different factors can be involved here, but perhaps the most controversial and unclear involves patients whose desire to end one's life stems from severe mental suffering. Though all countries who have legalized the practice of AS consider endless, terminal, *physical* suffering as a legitimate reason to end one's life, there is no consensus whatsoever on the legitimacy of endless *mental* suffering to justify one's same desire (Mehlum et al., 2020). Australia, for example, denies mental suffering as a valid reason for ending one's life, whereas Belgium, even in the absence of any physical suffering, identifies it as a legitimate enough motivation for AS (Mehlum et al., 2020).

Intense suicidal ideation is unfortunately a common symptom resulting from various mental, behavioral, and personality disorders, and complicates the question of determining whose judgement (patient, family, physician, etc.) is most suited for such choices (Mehlum et al., 2020). This topic alone is riddled with numerous complexities and considerations, especially within the field of cognitive sciences whose focus on the mind offers endless diverging justifications, but in the present paper is only mentioned as a means of exemplifying the lack of ethical clarity when including severe mental health disorders in AS.

In short, both legal definition and inclusion criteria are examples which clearly demonstrate some of the immense difficulties brought forth when considering the topic of Assisted Suicide as a legal practice. As a result, large variations exist between countries in the method and degree to which the right to self-determination is protected, making AS a highly convoluted topic in the legal, medical, and public domains.

1.1.2. Assisted Suicide in Society

Despite such controversial and ethically unclear issues, trends show that public opinions of AS in medicine have become more supportive in the last decade (Emanuel et al., 2016; Evenblij et al., 2019; Inghelbrecht et al., 2009; Lynøe et al., 2021; Sellars et al., 2021). It is repeatedly shown that public support for the legalization of AS in recent years is high, and generally exceeds that of physicians and healthcare workers (Lynøe et al., 2021; Piili et al., 2022; Sellars et al., 2021). A recent study on attitudes around AS in Sweden, for example, found that public versus physician support of AS was greater by roughly 40%, reflecting similar findings in other countries (Lynøe et al., 2021). Some studies suggest that opinions have not *only* become more supportive, but rather have become more polarized in *both* directions, perhaps resulting from heightened public pressure to have an opinion (Piili et al., 2022). For example, one longitudinal study in Finland demonstrated that physician opinions around AS are currently more polarized than they were compared to rates of support both 10 and 20 years ago, exposing the increasingly binary and controversial nature of the issue (Piili et al., 2022).

Other studies have sought to understand and explain the beliefs underlying such strong opinions, for example, those who deny AS as a medical practice given its incompatible nature with the medical ‘Hippocratic Oath’: a sworn promise taken by medical personnel stating their dedication to protecting patient lives (Mehlum et al., 2020; Potts, 2021). Likewise, it is consistently shown that those practicing and valuing religion are less likely to be in support of AS (Evenblij et al., 2019; Inghelbrecht et al., 2009; Sabriseilabi & Williams, 2022). Conversely, increased support for AS mirrors the overall international increase in attention toward individual human rights in the last century, especially so in the field of palliative care medicine (Ezer et al. 2018). In any case, comprehensive trends in the opinions of health care workers toward AS are not exhaustively understood and naturally require ongoing investigation.

1.1.3. Assisted Suicide in Medicine

When observing trends in the opinions of health care providers specifically, nurses tend to support AS more than their colleagues in other roles (and especially so when compared to specialized medical practitioners) (Sellars et al., 2021). This may likely be because their role confronts them with patients more directly and frequently than most other care providers, making them more inclined to understand reasons that make AS as a justified option (Inghelbrecht et al., 2009). However, an exception is seen in *all* types of care providers working regularly with dying patients, whose support levels for AS are consistently and significantly lower than their colleagues in other specialties (I.e., general practice, oncology, surgery, etc.) (Lynøe et al., 2021; Piili et al., 2022; Sellars et al., 2021). This may be due to their professionally broader scope of possible end-of-life care options available relative to their colleagues (Piili et al., 2022; Inghelbrecht et al., 2009), or the incompatibility of palliative care-specific values with AS practices (Sellars et al., 2021). Such findings are relevant in that they indicate an overall distinction of the opinions of both nurses and palliative care workers, which may likely be informed by the specific experiences of their role, and is the focus of this study.

1.2. Assisted Suicide in Austria

1.2.1. General Overview of Austrian AS System

In Austria's medical system, despite formerly being considered an illegal act, the legalization of AS was adopted by the Parliament in December 2021 and implemented as a medical practice in January 2022 (Brade & Friedrich, 2021; Khakzadeh, 2022). After lengthy political discussion, the Austrian Constitutional Committee raised this topic on the claim that restricting one's right to self-determination and free choice of their life is considered unconstitutional ("*Austria's parliament...*", 2021; Brade & Friedrich, 2021; Khakzadeh, 2022).

Many regulations and restrictions exist to ensure the individual choosing AS qualifies according to the legal requirements and inclusion criteria (Khakzadeh, 2022). The first step involves a cross-reference by two physicians, one of whom must have a specialty in palliative care medicine. It is the job of the physicians to make sure the patient is making the decision based on their own will, specifically: that they have been informed of all alternative options available to them (including guaranteed palliative care services, irrespective of the economic and environmental background of the person), that the desire is a durable one that is not temporary or fleeting, and that the patient's decision was made autonomously and solely by the individual (Khakzadeh, 2022). Technically speaking, the patient must be at least 18 years old (a stipulation not always required in other countries like Columbia (Mehlum et al., 2020)), an Austrian citizen or have had habitual residence in Austria, deemed capable of making this decision, and have an illness which "must bring a state of suffering that cannot be averted by other means" (Khakzadeh, 2022, p. 6). After receiving approval, patients not *immediately* suffering from a critical condition (who are instead allowed a shortened waiting period as little as three weeks) are required to wait at least twelve weeks before executing the operation (Brade & Friedrich, 2021; Khakzadeh, 2022). The final procedure is taken through an oral dose of a sodium pentobarbital pill obtained from a public pharmacy and can be administered with the assistance of any adult-aged individual who does not financially benefit from the death of the patient (Khakzadeh, 2022). Importantly, since this legalization, no comprehensive study has been done to assess specifically the status of AS implementation within Austria.

It is also worth noting that the law states that no medical person can be forced into engaging with this procedure if it against their wish, nor be punished for lawfully assisting with this procedure (Khakzadeh, 2022). This has important implications when considering the employees of institutions who publicly refuse to support or allow AS practices (for example, those working at Austria's largest public hospital (AKH) or the many religiously affiliated 'Rotes Kreuz' institutions) (Medical University of Vienna, 2021). In Austria, institutions associated with WIGEV - Austria's largest healthcare provider (including the AKH in Vienna) - currently restrict their staff from engaging with AS, as seen in their public statement (translated from German): "health staff cannot comply with the request for advice on assisted suicide and the establishment of a death will" (Wiener Gesundheitsverbund, 2023; WIGEV, 2022, p. 2). Importantly, this is only in effect during working hours, while the individual practitioner can assist in any way on their own time (Khakzadeh, 2022). Similarly, these institutions cannot punish individuals who do choose to help (in their spare time) patients desiring AS in any way, just as institutions cannot force their employees to engage with AS either.

1.2.2. Outstanding Issues

In general, as the prevalence of AS on both the national and global levels increases, there are still many controversial and unresolved aspects to consider. Lack of clarity on the smaller, more intricate issues relevant to AS also continues to expose the unmet needs of healthcare workers (Panchuk & Thirsk, 2021; Piili et al., 2022). For example, the regulations relating to the above alluded 'conscientious objection' - the ability of providers to opt out of participation in this process if it goes against one's personal beliefs - are often under evaluation and adjusted for their lack of explicit clarity (Khakzadeh, 2022). On the patient front, accessibility to such resources, especially in rural areas, is also often hindered by the mandatory cross-referencing system from two willing physicians, one of whom needs to be specialized (Mehlum et al., 2020; Panchuk & Thirsk, 2021). Finally, and very importantly to the present paper, is that many countries' legal documentation only notes the role of physicians, often leaving nurses to feel unclear about their personal and professional expectations in the process (Cayetano-Penman, 2021; Inghelbrecht et al., 2009; Khakzadeh, 2022; Richardson, 2023; Sellars et al., 2021). The lack of nurse representation in formal matters is repeatedly the case in countries who have legalized AS, and appears to be the same in Austrian legislature so far as well (Khakzadeh, 2022; Richardson, 2023). Such an issue is important to address as it can lead to various unfavorable consequences, such as feelings of uncertainty and hesitance in nurses' expectations according to proper legal, ethical, and personal conduct.

1.3. Present Empirical Study

1.3.1. Objectives

Given the collective information presented above, the present research investigation is critical for numerous reasons. Firstly, this study may be important in clarifying the role of nurses in the AS process, as the boundaries and expectations of their position have been a documented issue in other countries in the past (Cayetano-Penman, 2021; Inghelbrecht et al., 2009; Sellars et al., 2021). Lack of clarity in their precise role and responsibilities is a documented recurring issue, where "limited reference is made on the role of nurses who are integrally involved in the care of people at the end of life" (Cayetano-Penman et al., 2021, p. 68). However, it is simultaneously true and critical to note that in end-of-life care, nurses are the medical provider most prominently a directly contacting patients (Butler et al., 2018; Cloyes et al., 2014; Richardson, 2023). Their frequent interaction with patients could significantly contribute information in deciding patient eligibility, yet is currently neglected in formal law. Therefore, this study firstly aims at clarifying the exact nature of the role of nurses in AS decision-making, as it will be important for informing necessary systemic adjustments in the future.

Secondly, trends indicate that AS is and will continually become relevant in other countries in the near future (Lynøe et al., 2021; Piili et al., 2022; Sellars et al., 2021). Thorough documentation in Austria could be of benefit to implementation plans of other countries, and add to the global body of research regarding current AS attitudes.

Thirdly, such documentation will be beneficial for observing the trends of AS attitudes within Austria itself. This method has proven to be useful for other countries in similar situations in the past, who have performed internal comparative studies across decades to identify national trends and improve their systems (Lynøe et al., 2021; Piili et al., 2022).

Finally, and very importantly, understanding the experiences and opinions of nurses directly impacted by this topic is necessary for providing appropriate support.

1.3.2. Research Questions

Therefore, regarding the explicitly empirical goals of the topic, this paper aims firstly to answer the following research question in an *exploratory* manner: What is the current status regarding the implementation of assisted suicide in Austrian palliative care medicine? This encompasses three corresponding sub-questions, namely; What are the past and current attitudes of palliative care nurses regarding assisted suicide; What are the experiences of palliative care nurses with assisted suicide thus far; and What are the personal and professional needs of palliative care nurses with regard to their work with assisted suicide?

Such questions have provided the necessary guiding foundation for the empirical aspect of this study, allowing us to discuss the broader framework of this paper, namely: assessing the implications of the enactivist theory of cognition with regard to AS in Austria. I will attempt to apply the currently emerging philosophical framework to the topic introduced above for the purpose of providing a completely novel, beneficial tool in understanding and adapting the AS rollout process in its first year of legalization. In order to do so, a basic empirical foundation is needed to evidence the claims made and is thus included in the paper. This will be the main purpose of this cognitive science thesis.

Introduction to Enactivism

1.4. Overview and Statement of Relevance

The broad purpose of this paper, as stated above, is to analyze the topic at hand from the lens of a currently emerging domain within the field of cognitive sciences: Enactivism. To effectively analyze Austria's implementation of AS through the lens of an enactivist, it is first necessary to outline the basic and core elements of this theory, which I will briefly present next. Following such contextualization, these concepts will be used as a framework for analyzing the implementation process of AS in Austria, while opening a discussion of the critical implications posed.

It is worth noting that the intention of drawing the present connection of enactivism to AS is not merely an anecdotal or explanatory one (for example, simply stating how an enactivist would view and analyze the events relating to AS in Austria), but rather advisory to the topic at hand. It will attempt to use this philosophical lens productively, in order to firstly explain and secondly suggest improvements for AS implementation given the current data. Such an advisory role will be based on the foundational principles of enactivism, shedding light into what this philosophical theory of mind could mean for the future of AS in Austria.

1.5. Enactivism in Cognitive Sciences

In his book titled, 'The Embodied Mind,' F.J. Varela – one of the foundational creators of enactivism, and extremely influential scientist within the field of cognitive sciences – exclaims the following: "The challenge posed to cognitive scientists is to question one of the more entrenched assumptions of our scientific heritage - that the world is independent of the knower" (Varela et al., 2017, p. 150). This statement not only touches on some of the foundational questions faced by the field of cognitive sciences but also perfectly sheds light onto the revolutionary views that enactivism has brought forth in the last decade. It rapidly changes the narrative of cognition being a process between the representation-creating individual interacting with the fixed, objective, material world to instead viewing the collective system as a constantly evolving interplay of dynamic interaction.

As a result of this narrative shift, the study of cognition as an emergent property dependent on the embodied enactment of one's world can no longer be done in isolation (Stewart et al., 2010). Instead, the pursuit of investigating cognition takes a turn, so that "in order to understand what cognition is we must understand how organisms dynamically interact with others and their environment." (Hutto & Myin, 2013, p. 229). This follows the trend in cognitive sciences away from viewing the mind as an 'input-output' machine responsible for exploring and creating representations of the pre-given "world" as it independently exists, but seeing the mind instead as a continually evolving and emerging network shaped by the perception of our embodied actions (Varela et al., 2017).

Upon dropping the assumption of the mutual distinction between the individual and their environment, a substantial shift with consequential implications unfolds. Cognition can no longer be viewed from a reductionist viewpoint, not solely attributable to processes of the nervous system (Varela et al., 2017). The brain and its neural networks are no longer the sole bearer responsible for cognitive processes, and our actions in and on the world are not merely externalized representations of the mind held in our heads. Traditional representationalist views are dropped, and thus the world is no longer a set of entities which we represent and access through our processes of cognition and intelligence (Hutto & Myin, 2013). Instead, enactivism turns classical cognitivist views inside out, moving from “we must think in order to act” instead to “we must act in order to think” (Hutto & Myin, 2013, p. 228).

Specifically, enactivism emphasizes (I) the inclusion of the entire body through the concept of embodiment and (II) the direct and necessary role of our *actions* in the external environment for cognition to emerge. Cognitive processes are in these ways *enacted* processes that constantly evolve as embodied agents interact with their world (Di Paolo & Thompson, 2014; Varela et al., 2017). Simply put, cognition is made available by action. One’s environment is not a fixed entity accessed by internal mental processes of the agent as seen in representationalism (Hutto & Myin, 2013), but rather, it is evolving and subsequently impacting the agent in a recursive, dynamic, and mutually constitutive manner. Within this school of thought, a set of core concepts exists (Froese & Di Paolo, 2011) which are foundational to the enactivist theory of mind and are outlined here. Please note that the concepts provided here are not an exhaustive or objective list of core concepts in the field. Such a definitive list is not identifiable, as the theory is constantly being expanded upon and redefined. The qualities presented here are those which are most often appearing in the literature, are critically relevant to the topic at hand, and provide the background information necessary for the Discussion section.

1.5.1. Autonomy & Adaptivity

The first, and arguably most foundational quality of a cognitive system to the enactivist is autonomy (Di Paolo & Thompson, 2014). It is a recognizable unit in space, operationally closed and supported by an interconnected network of self-sustaining and enabling relations. Such internal relations are the only processes necessary to keep it alive and operating at the most basic level. The embodied agent is therefore both self-constituted and self-individuating, since each chosen interaction with the world is what continuously defines the boundaries between itself and the environment. This self-referential quality is well summarized by Froese & Di Paolo (2011) in stating that:

> *"An autonomous system … is organized in such a way that its activity is both the cause and effect of its own autonomous organization; in other words, its activity depends on organizational constraints, which are in turn regenerated by the activity itself"* (p. 6).

An activity-driven cycle thus emerges which is responsible for creating the individual's distinct organization, and importantly, implies ownership of one's lived experience. This is the minimal requirement for defining a cognitive, living system.

A related and relevant characteristic maintained by autonomous systems is that of adaptivity. Autonomous systems are importantly able to regulate their operationally closed system in the face of possible internal and external perturbations in the environment (Froese & Di Paolo, 2011). In this way, the agent can realign the balance of their internal state in order to compensate for changes in the environment. As with many of the foundational qualities of enactive systems, adaptivity is not exclusively present on the conscious, explicitly aware domain of cognition, but is also embodied on the sensory level. Real-time motor adjustments in reaction to the sensory impressions we gather from interacting with the world are "immediately coupled with spontaneous movement." (Noë, 2004, p. 6). It is in this way that our bodies learn from their interaction with the surrounding space on multiple levels, spanning from the cellular, motor, and finally the conscious.

1.5.2. Meaning & Sense-Making

The next essential quality of enactive cognitive systems is that of meaning-making. In the view of the enactivist, cognition is the simplest form of meaning-making, and further, living is an ongoing process of meaning and sense-making (Di Paolo & Thompson, 2014). Critically, 'meaning' here is neither an external property of objects in the environment to be discovered through an agent's cognitive processes, nor is it something to be defined internally by individual living system, but rather is an emergent, action-driven quality held within the *relational domain* between the agent and its environment (Froese & Di Paolo, 2011). The agent acts, some resulting effect follows, and such effect is used in real-time as feedback for the agent to add to its repertoire of meanings.

In this view, interaction quickly becomes necessary for the life of the agent, as an individual cannot make sense of something without first interacting with it. Action is *necessary* in order for the environment to be present within the cognitive realm of the agent, to which they can then assign significance and meaning. This concept is well summarized by the following statement from Di Paolo & Thompson (2011):

> *"Sense-making is an embodied process of active regulation of the coupling between agent and world..."* (p. 8).

In other words, it is the process of continually assessing the significance of stimuli resulting from a given embodied action - and therefore making meaning of such stimuli - in relation to one's identity. The concept of sense-making, being the simplest cognitive process available to the living agent, is therefore foundational in that it is the enaction of a meaningful world.

1.5.3. Self-Producing Identity & Reality

The self-produced identity and reality are further foundational concepts of enactivism relevant to the topic at hand. This essentially holds the idea that individuals are responsible for creating the world in which they are situated. If one's reality emerges as a product of their actions in a given environment, then the realm of possible realities present to the agent is constrained to their physical interactions (Froese & Di Paolo, 2011). Essentially, we are constantly choosing how and to what extent we engage with the world, and what is included in this choice makes up our perception of 'reality.' Again, Froese & Di Paolo (2011) summarize this concept by exclaiming:

> "*Since autonomous systems bring forth their own identity by actively demarcating the boundary between 'self' and 'other' during their ongoing self-production, it follows that they also actively and autonomously determine their domain of possible interactions*" (Froese and Di Paolo, 2011, p. 7).

An agent's reality is thus made real to them as it is dependent on the nature of their chosen actions within the world (and, as we have seen earlier, then assesses the significance of the resulting outcome). As such, the agent's adaptive regulation of environmental stimuli is not a passive occurrence that happens to an agent, but rather is a result of the *actively* generated activity of an individual.

In sum, our physical interaction with the world is what constitutes our lived reality. The feedback from these self-produced actions constitutes the body of information we constantly use to construct meanings. 'Meaning' and significance of one's world is not determined acutely from one situation to the next; Rather, it is acquired continuously through the ongoing need to realize one's self-created identity (Froese & Di Paolo, 2011). Each autonomous system enacts their meaningful world by the continual processes of sense-making. In the end, these meanings are *self-referential* in that they inform our opinions, beliefs, and attitudes toward the world, which in turn again shape the behaviors we choose to display.

1.6. The Multi-Agent System

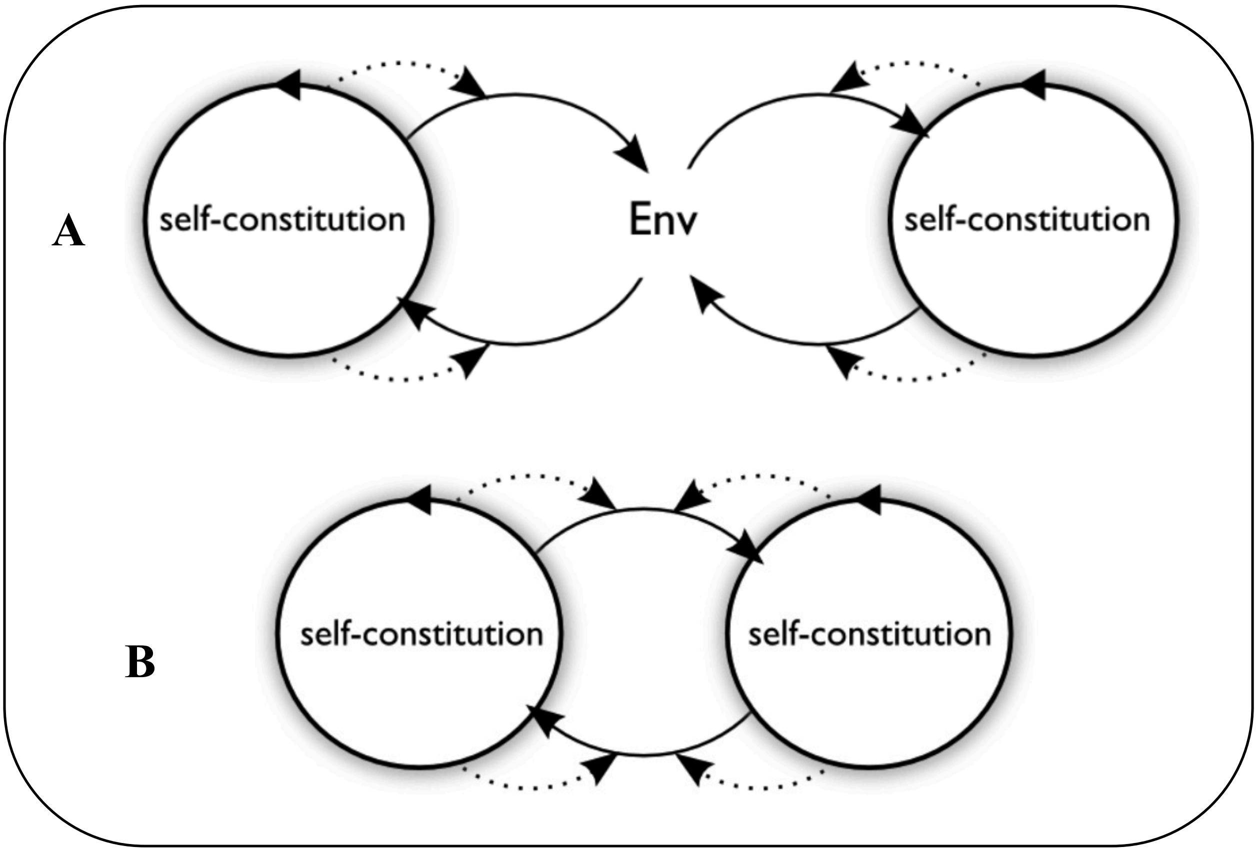
The final relevant layer of enactivism which emerges as an accumulation of the previously mentioned core concepts is the concept of the multi-agent system, namely, how multiple adaptive, autonomous agents living (sense-making) in their world interact with one another in a shared environment (Froese & Di Paolo, 2011). Such interactive theory is both built upon all of the foundational ideas mentioned above and is critical for application to the present context of analyzing AS in Austria.

In the concept of a multi-agent system, the interaction created between the two (or more) beings is seen as an autonomous system in its own right, having all the properties of autonomous systems as outlined by enactivism (Froese & Di Paolo, 2011). As such, it is necessary that the component agents engaging in this interaction are themselves autonomous and adaptive beings, as this is the most basic requirement of living. Essentially, the basis for the multi-agent system is that the action of one agent changes the sensorimotor stimulation (I.e., environmental input) of the other, changing their perceived environment and thus will affect how the receiving agent will in turn respond. This creates a continual or 'mutually recursive' loop whereby the resulting behavior has the same effect on the first agent in return. In this way, the multi-agent system can be nicely defined as:

> "*... an interaction process that is constituted by the mutually coordinated behavior of two or more adaptive agents whereby that interaction process is itself characterized by an autonomous organization.*" (Froese & Di Paolo, 2011, p.12).

The interaction process, as stated here, becomes autonomously organized, and is defined by the coupled actions of each component agent. Such an outline of a multi-agent system is useful in approaching the classic cognitive science problem of the 'cognitive gap,' as this level of explanation serves as an intermediary focal point between the individual agent and the vaguer notion of social cognition (Froese & Di Paolo, 2011). As usual for enactivism whose theories can retain continuity of concepts across multiple levels of explanation, the multi-agent system has implications spanning from the biological (for example, multi-cellular complex systems of cells which create one autonomously organized functioning system) to the inter-personal human level (Froese & Di Paolo, 2011). While it is worth acknowledging that such ideas are not yet developed enough to sufficiently explain everything on this level, concepts and insights gained on the simpler, smaller levels can provide some critical insight into the dynamics of the higher-order systems. In this way, the conceptual continuity of enactivist theories across multiple layers enables us to offer some explanation of co-regulated environments. This is achieved by focusing more on the developmental lifespan on one individual across their lifetime, as opposed to, for example, the gap faced when tackling the phylogenetic gap spanning the development of all of humankind (Froese & Di Paolo, 2011). Therefore, a midway level of investigation and explanation is created, in which we can take individuals as valid subjects of analysis.

Such a system can be visualized as seen in **Figure 1**, borrowed from Froese & Di Paolo (2011, p. 11-12), in which the agents (two, in this case) engaging in the multi-agent system are represented by each circle. As represented by the solid arrows surrounding the circles, the individuals are both self-sustaining, autonomous beings taking part in sustaining the recursive mutual interaction. Their necessarily adaptive character is represented by the dotted arrows, which modulate the system’s behavior by dynamically changing the output given to the environment **[Figure 1A]** or to the other agent directly **[Figure 1B]**. In the case of **Figure 1A**, the two agents interact with their shared environment, thus indirectly impacting one another through their influence on the shared space. In case **Figure 1B**, we can see the emergence of a newly autonomous system, as the agents’ actions directly source the other’s sensorimotor input (as shown by the solid arrows between agents). The two agents are engaged in a recursive and mutually sustained interaction, in which sensorimotor coupling is possible to occur.



[Figure 1] *A visualization of the multi-agent system in the theory of enactivism (borrowed from Froese & Di Paolo, 2011, p. 11-12).* ***Solid arrows*** *represent processes of the self-sustaining, autonomous, individual agents.* ***Dotted arrows*** *represent adaptive processes which affect the system, dynamically changing its autonomous behavior.* **(A)** *Two autonomous agents interacting in a shared environment. The actions of each indirectly affect the other by changing the overall environmental conditions.* **(B)** *A recursively sustained mutual interaction of two agents mutually engaged in sensorimotor coupling, giving rise to an interaction process whose emergent organization is also autonomous.*

In this way, the emergent system can be seen as a unit with its own autonomous properties. Such conditions are needed for the constitution of a multi-agent system, whose properties can only be made possible through the participation of each component agent.

An important distinction here should be named between the notions of multi-agent versus social systems; Namely, the former is a necessary condition for the latter to exist but is not necessarily equivalent (Froese & Di Paolo, 2011). Multi-agent systems can exist yet not be social. For example, buying food at a grocery store is a process requiring many agents in a shared context which are not obviously present at each moment (I.e., farmers, those involved in the processing steps, transportation, grocery store workers, etc.) but whose actions constitute the system that makes food available to the public. However, choosing which eggs to buy is not a social experience, although it takes multiple agents embedded in an interactive system to be achieved. In this way, 'participatory sense-making' can occur in a multi-agent interactive system without it being social. In participatory sense-making, new and otherwise-unattainable forms of sense-making can be made available to each agent through the presence of another by their "coordination of intentional activity in interaction" (De Jaegher & Di Paolo, 2007, p. 497). This is a shared form of sense-making (Di Paolo & Thompson, 2014).

Further, for an interaction to be considered a *social system*, agents must engage in joint action, whereby the individuals recognize each other as such (Froese & Di Paolo, 2011). The individual actions of the participants responsible for creating the autonomous, emergent social system consequently do not fully determine the outcome of the encounter, and importantly, themselves remain autonomous as well (Di Paolo & Thompson, 2014). Simply put, social interaction is the joint active regulation of the coupling of the agents and the world they co-create.

This can theoretically occur on large scales of numerous interacting agents. Still, the enactive theory is only beginning to form an explanation of such participatory sense-making processes. Such notions of multi-agent systems are particularly relevant to the present study, as the whole focus of the study is interested in the relational interactions had between individuals in the highly complex, multi-agent, and social world of health care in Austria.

1.7. Final Remarks

Enactivism is a theory of mind that simply put, states that we as autonomous and adaptive beings actively create and make sense of our world through interaction. Rather than our thoughts and beliefs guiding our actions in the defined world, our actions (spanning from the sensorimotor to those consciously chosen) are what substantiate our thoughts and beliefs. This is founded on core principles necessary in the life of each living being, as presented here. From this starting point, a complex, emergent world evolves that can neither be reduced simply to the actions of a system's individual components (reductionism), nor is it necessarily a vague, unexaminable entity of its own (dualism); It is somewhere in between, and dependent on both parties. In the words of Varela et al. (2017, p. 172), the middle way objective of enactivism here is to "bypass entirely [the] logical geography of inner versus outer by studying cognition not as recovery or projection but as embodied action." Such revolutionary framework of thought will guide the critical analysis to follow.

Again, this overview is only an outline of the core elements of the theory of enactivism, intended to set the stage for further discussion of broader and more applied topics. These concepts will be merged with the information presented regarding Assisted Suicide, in order to provide a novel and productive perspective on the unfolding events in Austria today.

2. Methods

The present study was an observational, cross-sectional survey study. Reporting followed the STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) guidelines (Elm et al., 2007).

2.1. Ethical Approval

Ethical approval was required and attained from the institutional ethics committee of the Medical University of Vienna (No. 1373/2022). Therefore, this study was conducted in accordance with the Austrian national legislation on ethical research practices. Additionally, after receiving study information, consent was given by participants on the first page of the questionnaire by clicking a button, thereby agreeing to a consent statement. Responses to the questionnaire were both voluntary and fully anonymous. No personally identifiable data was collected or used, and data was kept anonymous throughout collection and analysis.

2.2. Participants

The target group for this study was all palliative and hospice care nurses having professional experience practicing in Austria. Formal requirements for participation in the survey were four-fold, including: (1) being a hospice or palliative care nurse in Austria, (2) being at least 18 years of age, (3) having sufficient knowledge of the German language, and (4) able to provide consent to the study. This population was reached by contacting all hospice and palliative care organizations with practicing nurses throughout all nine states of Austria, via email. Emails were extracted from 'Hospiz Austria,' an overarching company connecting all hospice and palliative care facilities in the country (Dachverband HOSPIZ Österreich, 2022).

2.3. Materials

The German-language questionnaire was expanding upon on already-published material (Ganzini et al., 2002a; Miller et al., 2004). The final questionnaire took an estimated 15-20 minutes to complete, and consisted of four main sections, presented in the following order: Demographic Information, Attitudes & Beliefs, Personal Experiences, and Further Support (please see the Appendix for full versions of questionnaires). Both quantitative and qualitative data was collected. Our survey included the *4-Item Assisted Suicide Attitude Scale* and the *5-Item Comfort Discussing Assisted Suicide Scale*, (Miller et al., 2002a), as well as the validated German version of the Edmonton Symptom Assessment Scale (ESAS) for the assessment of symptoms of patients requesting AS (Bruera et al., 1991; Stiel et al., 2010). The latter data was used for a different study, was not analysed or used in any way in reference to the present study, and will not be expanded upon in the present paper. Naturally, all questions were worded in attempt to remove as much bias and influence on participant responses as possible.

The parallel-blind method was conducted for the translation of the English language content, where two individuals separately translated the questions, with the final version being informed by a third person (Behling & Law, 2000). Additionally, a native English speaker reviewed the questions for accuracy in meaning. German language alone was used under the assumption that individuals having knowledge of the German language sufficient enough to work in a patient care setting in Austria would qualify them enough to complete a questionnaire.

A pilot study was conducted with a volunteer group of palliative care physicians, nurses, and psychometric specialists, and resulting comments were taken into account for the refinement and optimization of the survey before official distribution.

2.4. Procedure

The questionnaire was distributed online via email to all hospice and palliative care facilities with practicing nurses in all nine states of Austria. One initial email and two reminder emails were sent to all relevant facilities from September to December, 2022. This sampling strategy was accompanied by a snowballing strategy, in which nurses who received the survey were asked to send it to relevant individuals within their networks. This method is advantageous in that it increases both response rates and the diversity of the resulting sample (De Spiegeleire et al., 2014).

2.5. Statistical Analysis

Only responses which had given consent were allowed to begin the survey; In this case, a total of 335 individuals. Of this population, 283 had answered at least until the first question about personal beliefs about AS, were deemed eligible according to the requirements listed above, and were included in analysis. All forms of analysis kept the data anonymous.

2.5.1. Quantitative Data

Data was cleaned, analyzed, and visualized exclusively using R Studio programming software. The quantitative data was analyzed using an exploratory approach, and answers of the responders are described with raw numbers and proportions (percentages). Few correlations were calculated to address possible relationships between existing variables. Finally, as reported in the Results section below and unless otherwise indicated, responses ‘strongly agree’ and ‘agree’ were grouped as ‘agreeing’ with a given statement (and vice versa with statements of disagreement; neutral responses were not included in either grouping and were separately reported).

2.5.2. Qualitative Data

Qualitative data was gathered through five optional, open answer questions of the survey. These were translated to English from their original German form and systematically categorized by frequency of appearance to identify main trends in responses. The identified trends were used as supportive data for the interpretation of results and importantly, to identify the strongest support needs of the nurses.

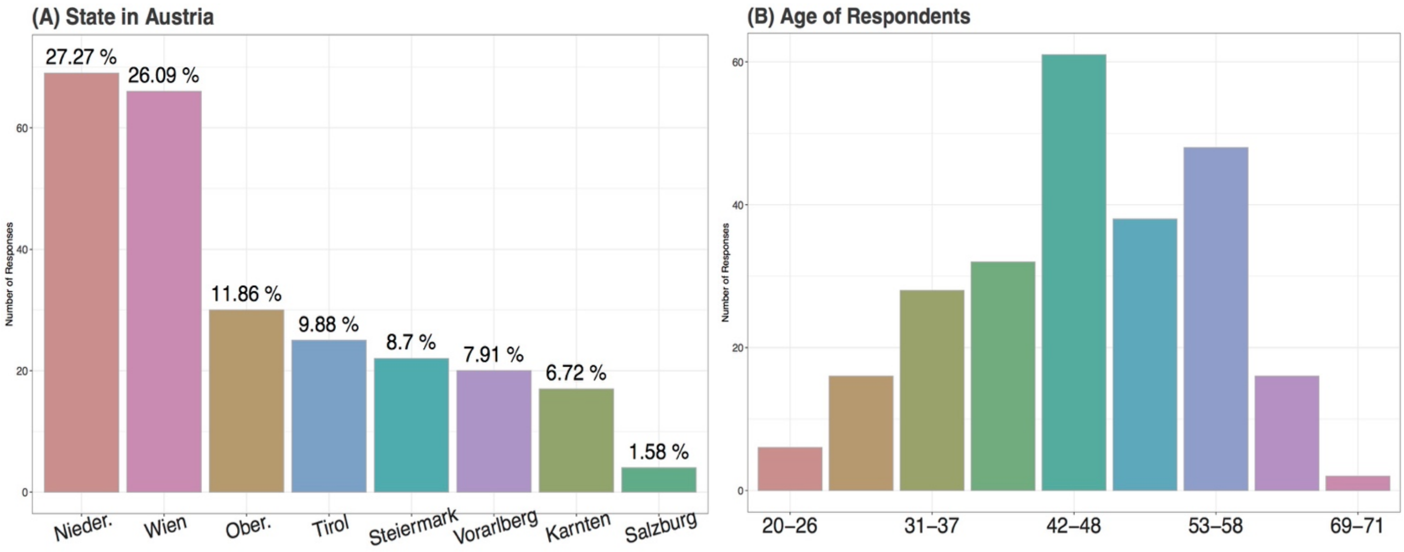
3. Results

3.1. Quantitative Results

3.1.1. Demographic Information

Of the 335 collected interviews, 283 were included after filtering for sufficient answering qualifications (please see Methods section above for more information). All 9 states of Austria were represented in the responses gathered **[Figure 1A].** The median age of respondents was 46 years old, with a range of 54 years **[Figure 1B]**. The average number of working years in the relevant field was roughly 10.5 years.

Of 283 respondents, 173 (61.13%) reported caring for at least one patient who expressed a death wish in the last year. The estimated number of requests for AS made by patients, as reported by nurses, was 568 requests in total. It is important to note that this figure does not account for possible repeat requests from one patient to multiple nurses, and therefore is likely an overestimation.



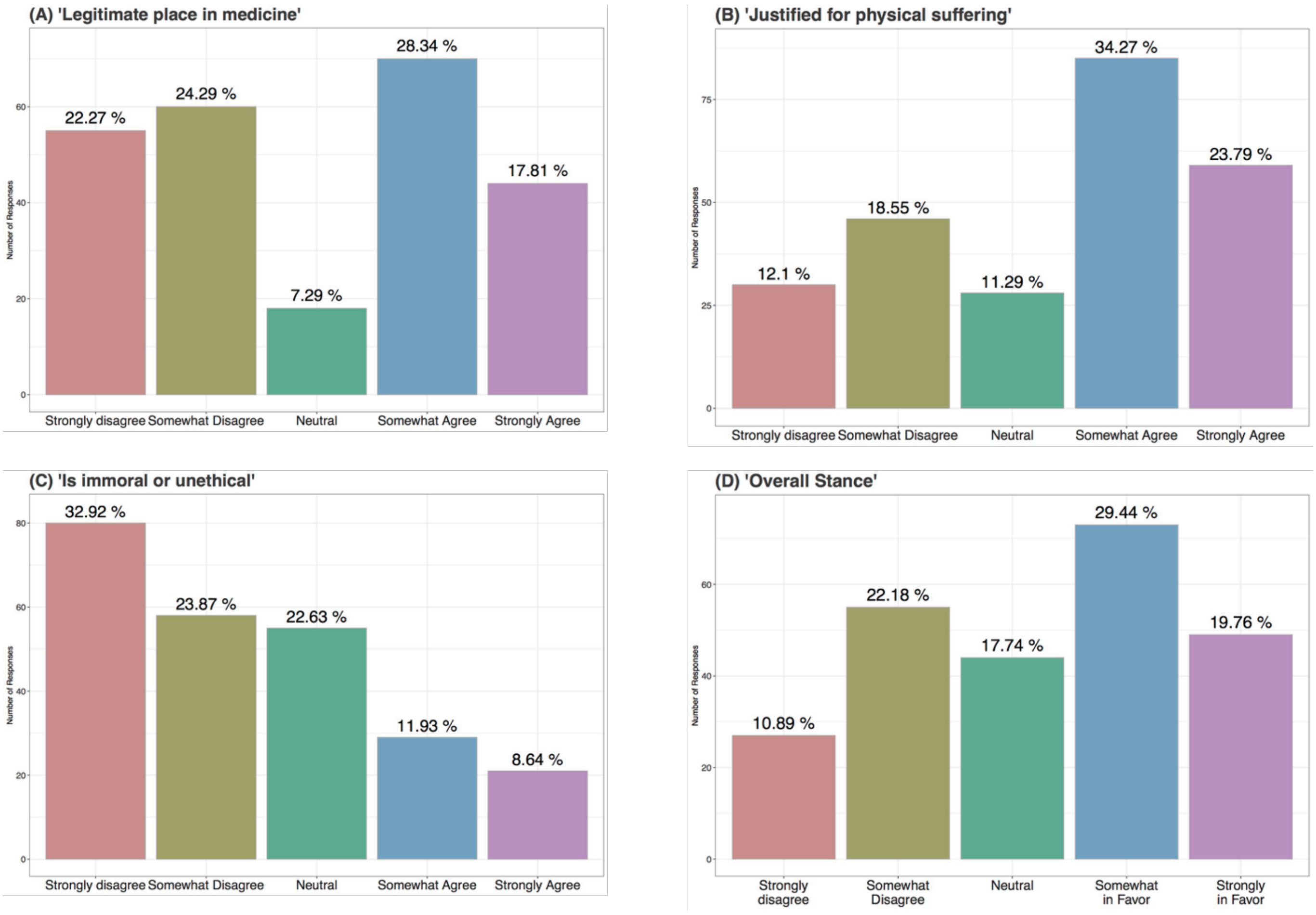
[Figure 1] *Working location and age of respondents.* ***(A)*** *Response rates with percentages are listed according to the Austrian state of employment of respondent. All 9 states of Austria are represented. Abbreviations "Nieder." stands for 'Niederösterreich' and "Ober." stands for 'Oberösterreich.'* ***(B)*** *Age of respondents, grouped into nine intervals.*

From these requests, it was estimated that 146 individuals have drawn up a death will, and 53 individuals have been granted permission to carry out assisted suicide. Again, these figures are not officially reported, but are survey-gathered estimates from the recollection of nurses.

3.1.2. General Beliefs & Attitudes

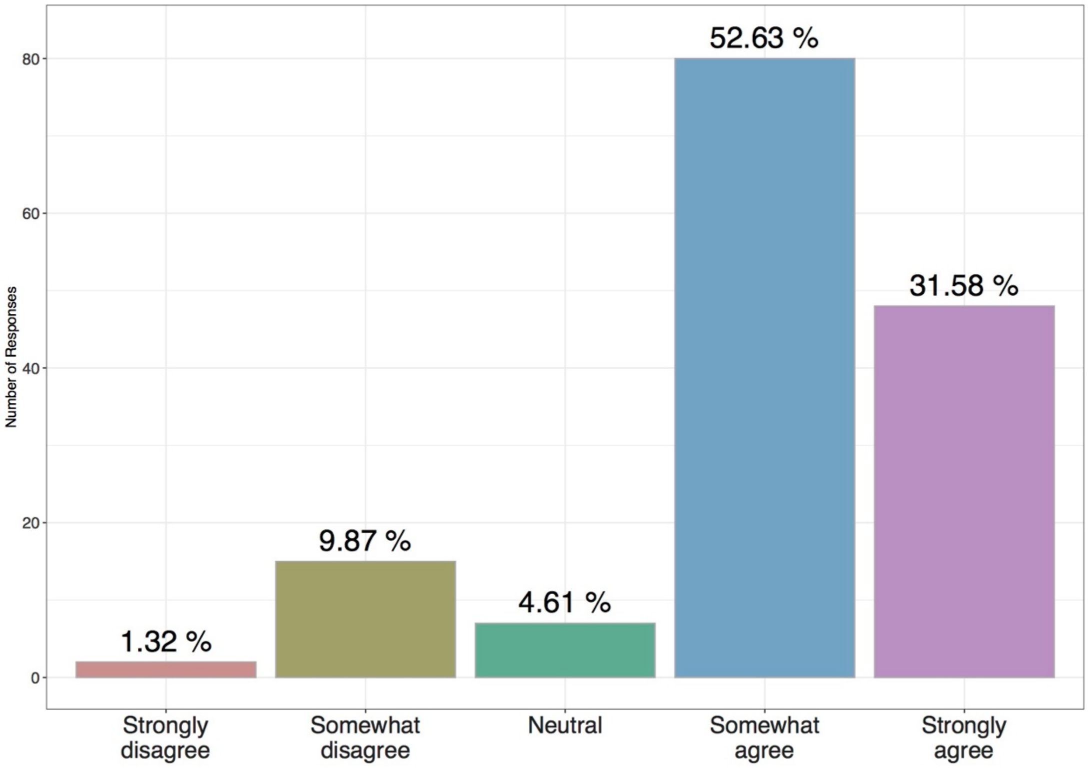
Stance on AS

When asked about their position on the legalization of AS, half of respondents (50.36%) expressed support (either supportive or strongly supportive) **[Figure 2D]**. Still, 31.65% expressed being either against or strongly against the legalization, making over a third of individuals generally unsupportive of the recent legal change. Almost one-fifth of responders (17.74%) reported having no opinion. Still, over 80% of nurses said they could understand the reasons for the patient expressing interest in AS **[Figure 3]**. Nearly three-quarters (73.15%) of nurses said their opinion of AS did *not* change following their experiences in the last year. Roughly one-fifth (19.84%) reported their opinion changing 'a little,' whereas only 4% said it changed dramatically.



[Figure 2] *Nurses' stance on the topic of Assisted Suicide.* **[A-C]** *Three questions adapted from the* '4-Item Assisted Suicide Attitude Scale' *(Miller et al., 2002a). Responses show level of agreement to a given statement, on a 5-point Likert scale.* **(A)** *Responses to question,* "Do you think assisted suicide has a legitimate role in hospice care?" **(B)** *Responses to question, "*Do you think assisted suicide is justified when there is physical suffering?" **(C)** *Responses to question,* "Do you think assisted suicide is immoral or unethical?" **(D)** *Single standing question asking, "*What is your position on the legalization of Assisted Suicide?*"*

In response to questions from the *4-Item AS Attitude Scale* (Miller et al., 2022a), about half (52.36%) of respondents agreed that AS has a justified place in hospice care and is a legitimate option for physical suffering **[Figure 2A-B]**. One-fifth of respondents agreed with a statement expressing that AS is 'immoral' or 'unethical,' whereas 56.56% disagreed **[Figure 2C]**.



[Figure 3] *Response rates of nurses when asked if they could understand the reasoning of patients requesting AS.*

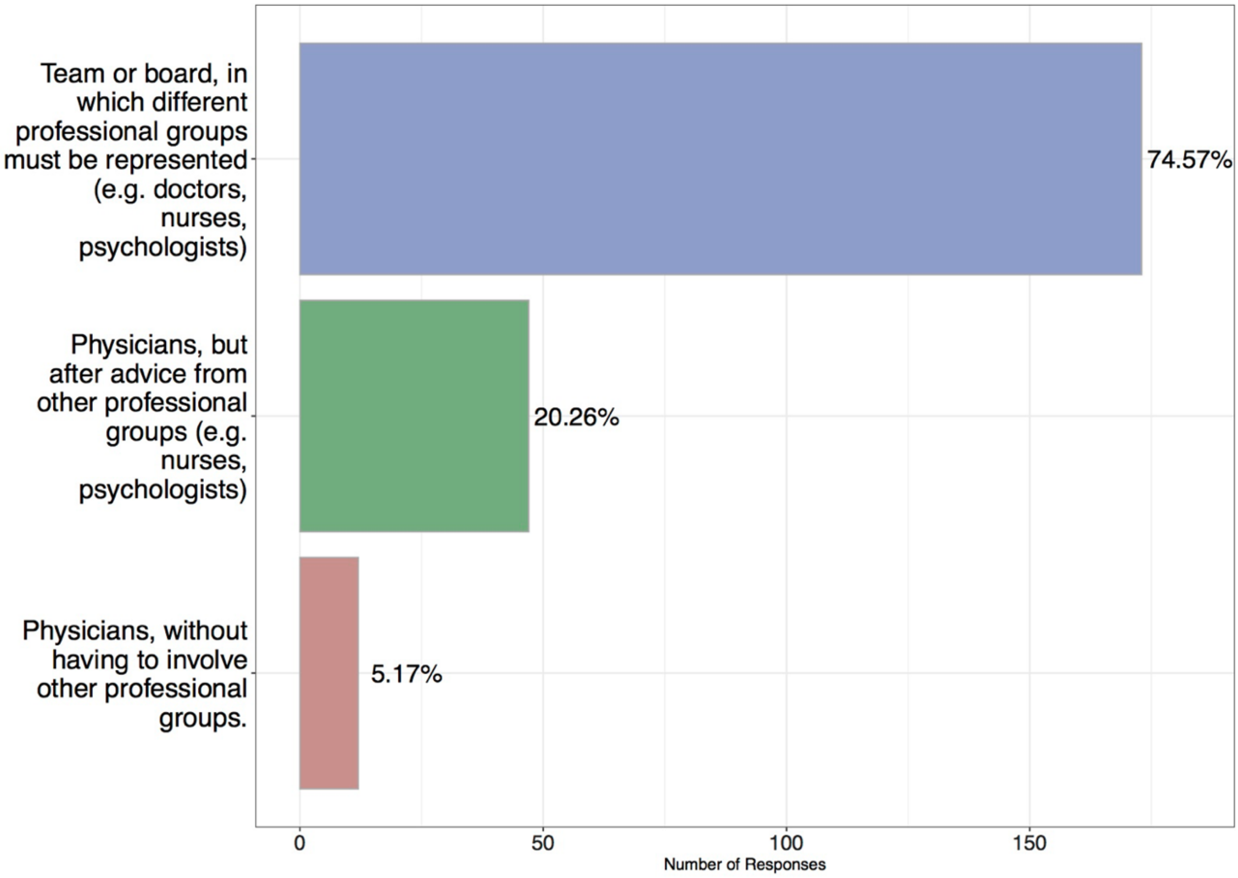
Finally, after performing a Spearman's ranked correlation analysis, a significant negative correlation (p-value = 2.275×10^{-5}) between the nurses' support for AS and the importance of religion in their life was seen. We can thus reject the null hypothesis that these two variables are completely independent, reinforcing the finding from numerous other studies showing a negative correlation between support for AS and importance of religion in one's life (Evenblij et al., 2019; Inghelbrecht et al., 2009; Sabriseilabi & Williams, 2022).

Level of Comfort Discussing AS

When asked about comfort level discussing AS-related topics with various groups of people (five groups included: patients, colleagues, bosses, colleagues for case-related assessment and advice, and bosses for case-related assessment and advice), less than one-fifth (17.67%) disagreed with statements expressing comfort with such topics, while the rest were either neutral or agreed. Respondents expressed feeling the most comfortable when talking to colleagues in a professional, case-related manner.

Decision-making; Nurses' Opinion

Around 63% of nurses either agreed or strongly agreed that nurses should have an official say in the final decision-making process for patients desiring AS. Importantly, almost three-quarters (74.57%) of nurses think the decision-making process should rather be done by a board of professionals with multiple professional groups represented **[Figure 4]**. Only about 5% believes the current process should remain as it currently is (physicians solely making the final decision, without input from other professional groups) **[Figure 4]**.



[Figure 4] *Nurses' opinions regarding how the final decision for patient eligibility should be made. The third option represents the current system of deciding eligibility.*

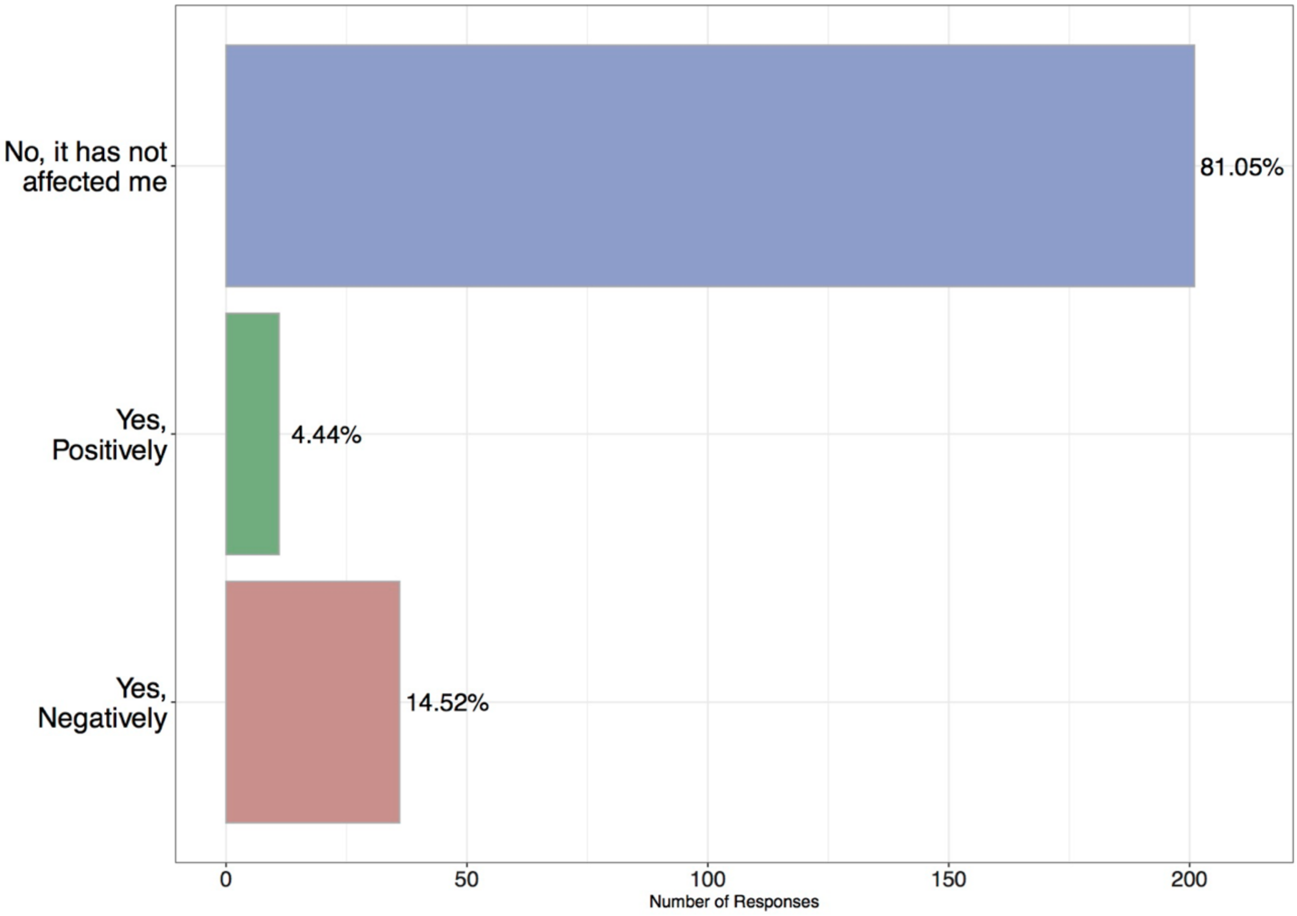
3.1.3. Experiences of Palliative Care Nurses

Formal encounters with AS

According to the survey, over half (61.2%) of nurses reported having at least one patient who had expressed a wish for AS in the past year since legalization. Additionally, roughly one-fifth (22.7%) stated having patients who were eligible for carrying out AS, and 16.2% (n=45) nurses reported having a patient who actually carried out AS. Again, it is important to note the fact that multiple nurses care for patients in the end of their life, making it likely that multiple nurses could have reported experiences had with the same patient.

Personal Wellbeing

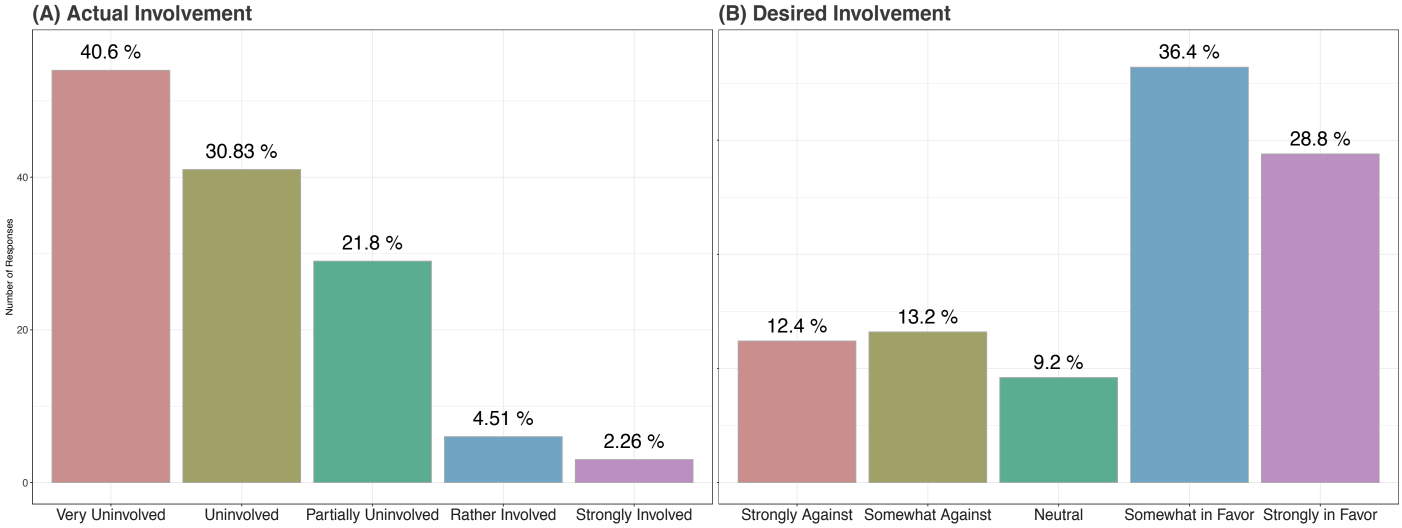
Almost four-fifths (78.21%) of respondents reporting having no change to their overall wellbeing as a result of the legalization of AS **[Figure 5]**. From those that *were* affected (n=47), responses indicating a negative impact on personal wellbeing (n=36) outweighed positive reports (n=11) by almost four-fifths (76.60%) **[Figure 5]**.



[Figure 5] *Responses to survey question asking:* “Do you feel that your mental health or well-being has been impacted by the legalization of assisted suicide?” *Responses to 5-point Likert scale were condensed into 3 groups, as seen above.*

Decision-Making; Nurses’ Experience

As it currently stands, roughly 60% of nurses felt they were not involved in the official decision-making process for patient eligibility (with over half of this group reporting they were *very* uninvolved), whereas only 9 individuals (5.70%) felt involved at all **[Figure 6A]**. When asked if they felt their personal opinion of AS influenced the decision of the patient, the most frequent answer was “neutral” (*“weder noch”*). Of those who had an opinion either way, nearly 5 times as many reported their opinion being uninfluential versus influential (with only 1.27% reporting being ‘very influential’). Somewhat reflecting the earlier finding **[Figure 4]**, majority (63.3%) of nurses believe they should have a final say in the decision making process of patient eligibility for AS **[Figure 6B]**.

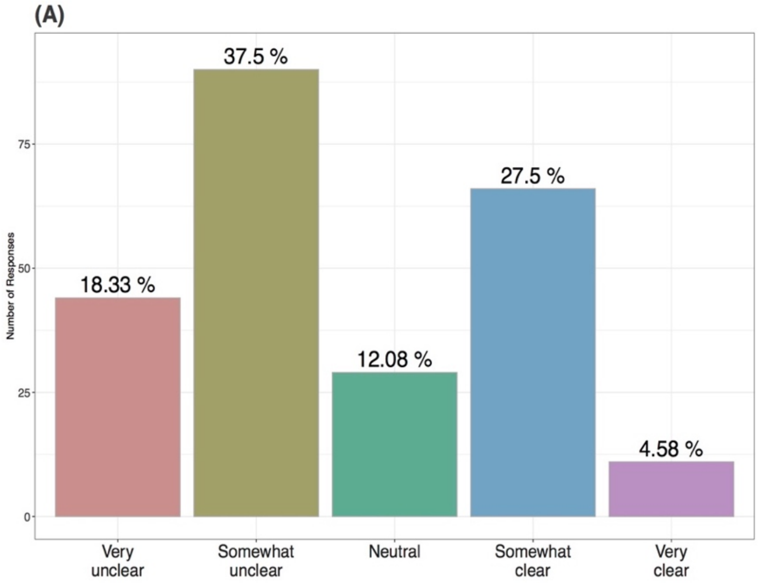


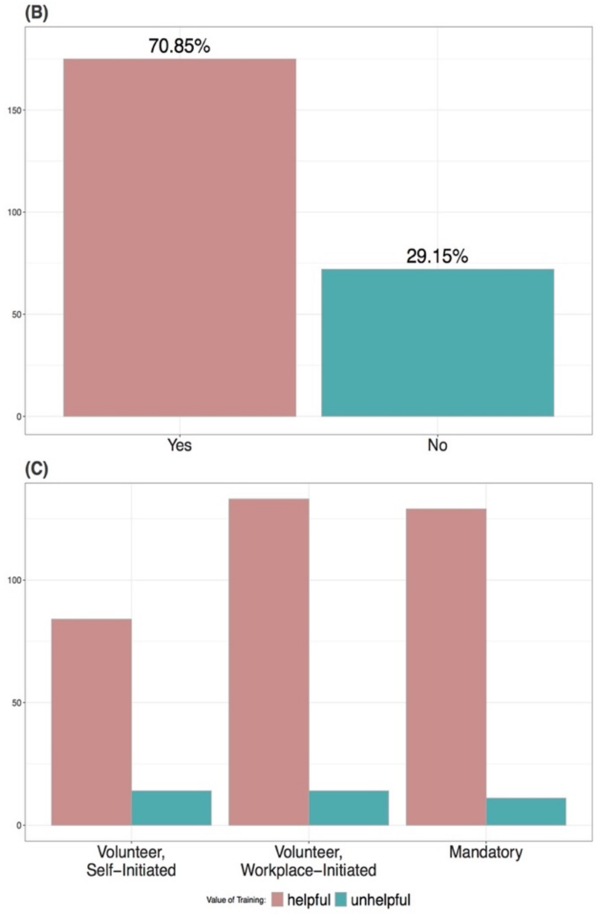
[Figure 6] *Perceived and desired level of involvement in the processes of AS.* **(A)** *Responses to question asking how involved they were in the patient’s decision making process.* **(B)** *Responses to question asking how involved they think nurses should be in the* official *decision making processes on patient eligibility.*

Training & Preparedness

Participants were asked about the training they had received, in one of the following categories: 'mandatory,' 'volunteer – offered through the workplace,' or 'volunteer – self-initiated.' Roughly two-thirds (68%) of participants reported receiving *any* kind of training prior to the implementation of AS **[Figure 7B]**.

All but three (96.94%) of the nurses who chose to engage in *voluntary* training (within either sub-category) found it to be helpful **[Figure 7C]**. Similarly, the large majority (87.5%) of nurses who engaged in *mandatory* training found it to be helpful as well **[Figure 7C].**





[Figure 7] *Clarity of AS process and impact of training.* **(A)** *Perceived level of clarity on the current AS implementation process.* **(B)** *Response rates to question asking if any training or workshop had been done prior to implementation of AS.* **(C)** *Graph expressing the value of received training for those who answered 'Yes' to question* (B). *Type of training was categorized into three groups as seen, and a 4-point Likert scale was simplified into 2 categories, either 'helpful' (pink, left) or 'unhelpful (blue, right).*

At the onset of implementation in January 2022, about 30% of nurses felt that they were prepared to talk to patients about AS-related matters, while over half (56.03%) expressed feeling unprepared. Similarly, over half of the respondents (52.14%) *currently* feel as though the implementation process of AS is either *'unclear'* or *'very unclear'* (with roughly half of that population choosing the latter), while only 29.96% reported either *'clear'* or *'very clear'* **[Figure 7A].** Despite this, at the time of survey distribution (9-12 months after legalization), almost 60% - an increase of roughly one-third - reported feeling prepared to hold such discussions with patients, while less than one-quarter (23.90%; a decrease of roughly one-third) reports still feeling unprepared.

3.2. Qualitative Results

Qualitative data was gathered through five optional, open answer questions of the survey. These were translated to English from their original German form and systematically categorized by frequency of appearance to identify main trends in responses. The identified trends were used as supportive data for the interpretation of results and importantly, to identify the strongest support needs of the nurses. Responses reported here are not exhaustive, but represent the most prominent occurrences of answers given.

3.2.1. Impact on Mental Health and Wellbeing

When asked how nurses' mental health and wellbeing has been impacted following the legalization of AS, three general categories of answers emerged: (I) concern about the effect on the purpose and quality of palliative care values as a whole, (II) concern about the wellbeing of patients (for instance, if they feel external pressure or they are a burden for choosing to live), and (III) anxiety about future developments of the law and the possible obligations it would mean for their role as a caregiver.

3.2.2. Change in attitude towards AS as a result of experiences in the last months

When asked specifically how nurses' attitudes towards AS has changed following their experiences since its legalization, a variety of response categories emerged. Answers representing both a change in attitude toward more and toward less support of AS were present. Those who indicated becoming more supportive said most often that personal experiences witnessing the suffering of patients, discussions with colleagues (notably physicians and theologians), and gaining more knowledge through lectures were most influential in making them feel more supportive toward AS. Such experiences reportedly resulted in increased empathy for suffering patients, understanding their reasoning more, and having less fear of the topic and procedure after engaging with it for some time. Those who indicated becoming less supportive of AS after their experiences most often said that it was the immature and poorly managed procedure for interested patients that made them less confident in its place in medicine.

3.2.3. How should the final decision be made?

Those who did not select any of the pre-provided answers to the question of how the final decision should be made (I.e., doctors alone, doctors with advice from others, or on a board of professionals comprised of various involved occupations; see **Figure 4**) had the option to write in an alternative answer. From those who chose this, only two other suggestions were collected, those being: (I) patients alone should make the final decision and (II) an ethics committee.

3.2.4. Additional support needed for palliative care workers and professionals

When asked which specific kinds of support are needed or would be most helpful for involved professionals, very repetitive responses were given. The most common by far was the option for nurse supervision, more personnel overall, and more time for patients to decide and discuss. Also prominent were requests for professional psychological support for nurses interacting with these patients, "interdisciplinary exchange" amongst various healthcare professionals, as well as four requests for an increased salary. The answers taken together indicate that many more resources in general are needed for the improvement of the AS implementation process.

3.2.5. What other aspects that weren't mentioned are important to you?

When asked for any additional input not mentioned in the questionnaire, amongst more requests for further resources and support (as listed above), two categories of answers most prominently emerged: (I) Many stated that the implementation process of the law has been very difficult to navigate for both healthcare professionals and for patients. Concerns for the accessibility to interested patients was a common reason listed here. Additionally, suggestions for refinement of the decision-making process were most often listed as a potential area of improvement for this issue. (II) Multiple responders requested the refinement of inclusion criteria to be more inclusive in the future as an important topic. Interestingly, these answers almost unanimously drew attention to the case of patients living with ALS. For example, statements such as, "In my opinion, the most affected patients - ALS patients - have been totally forgotten. Especially with ALS patients, the desire for assisted suicide only exists when they are no longer physically able to carry out the suicide themselves." Generally, statements like these draw attention to the need for addressing such accessibility issues in the system.

4. Discussion

In light of the immense changes happening to the Austrian health care and political systems following AS legalization, novel theories of mind within cognitive science have the potential to provide unique and influential perspectives to such issues. Thus, this philosophical analysis of the survey results attempts to do just that: to bring forth critical insight and new ideas which might be omitted from a standard scientific analysis.

In this way, the purpose of this paper goes further than only empirically identifying and analyzing the results from the current questionnaire. Rather, the purpose is to suggest ways the enactivist theory of mind can explain, influence, and potentially benefit the future rollout process of AS in Austria. Which principles from enactivism could be applied to the obtained results to explain the current climate? How could its underlying philosophies be of use to the rollout process of AS moving forward? These central questions are what guide the following discussion, which will provide insight to how the enactivist theory of mind can explain and support the results exposed by the survey results for the continued rollout of AS in Austria.

4.1. General Attitudes of Nurses // Self-Produced Identity and Reality

4.1.1. Stance on AS

Explanation

The first core concept of enactivism which can provide an effective framework for viewing the questionnaire results is that of the self-produced identity and reality. Let us briefly remind ourselves that this principle suggests that we as embodied agents are responsible for choosing *how* and *to what extent* we interact with the world around us. Consequentially, the results of this choice make up our perception of our 'lived reality.' Whether subconsciously or consciously, our chosen actions inform the internal beliefs and attitudes we hold, which in turn guide the nature of our future choice to act (or not) with a given external cue. As a result of it all, the subjective existence of our external environment is enabled by our actions, making our realities in this way 'self-created' (Froese & Di Paolo, 2011).

When applied to the data of nurses' opinion of AS in Austria, we can understand that nurses' engagement with AS will provide the content that informs their opinions and held attitudes of the topic. Nurses, embedded within their environment, define the domain of possible interactions with the AS procedure through the nature of their actions. We can use this theory to interpret the result that roughly three-quarters of opinions of AS have not changed following one year of legalization, and why the opinions of its legitimacy in medicine remain so widely spread **[Figure 2B]**. Besides those whose opinions will remain the same irrespective of any new information, it is possible that by only having had 9-12 months of exposure to AS engagements since the legalization, there is too little new input with which to inform a change in opinion, thus leaving opinions relatively unchanged.

A comparable scenario may have occurred on the community-wide scale as well when considering the behaviors of organizations like 'Caritas,' 'Rotes Kreuz' and other main religiously affiliated institutions of Austria. As was the case in the present study, it is commonly documented that religious individuals and institutions often do not condone AS practices as it can be seen as opposing their organization's values (Evenblij et al., 2019; Inghelbrecht et al., 2009; Sabriseilabi & Williams, 2022).

Upon legalization of AS in Austria, these institutions (along with others such as the national health care organization WIGEV, who restricted AS practices in their hospitals during working hours by stating it “contradicts the care mandate and statutory tasks of the equals WIGEV”) publicly announced their stance against such processes and forbid any AS-related practices from happening in their care facilities (Khakzadeh, 2022; WIGEV, 2022, p. 1). As the law states that nobody can be forced to provide such services, this was perfectly lawful (Khakzadeh, 2022); However, such regulation inherently removes many possible opportunities for interaction of caregivers with AS-processes.

In the idea of the self-created reality, we are responsible for enacting the lived world which in turn form our perceptions of our realities (Hutto & Myin, 2013). When opportunities for engaging with and thus enacting an aspect of external world (such as AS) are systematically removed, a change to previously held beliefs is far less likely to occur since informative instances of engagement are far less present. This is similar to the case seen with 60% of the nurses’ who reported not receiving any mandatory training **[Figure 7B]**, leaving their training-based interaction with AS solely up to personal initiation. Without regular, built-in interactions on AS-related topics (through direct engagement, for example, through personal experience with patients, special trainings, colleague consultations, etc.), it is much less accessible for individuals in these institutions to have new input with which they could reform previously held beliefs. In other words, by systematically removing the ‘affordance’ out of their environment, the broader use, acceptance, and culture of AS will be slower and overall less likely to change.

Conversely, it follows that the more the affordance is present (I.e., more AS cases in a workplace, more requests, more conversation, etc.), the more nurses will be given an opportunity to engage with this topic and define their personal beliefs about it. The perpetuation of widespread and relatively unchanging opinions of nurses as seen in the data will continue to be split unless systematic intervention is in place.

Suggestion

As a result, principles of enactivism can inform suggestions for creating a working environment in which nurses of all opinions can have the opportunity to regularly engage with their new responsibilities and further, to provide a welcoming, accessible environment for AS-interested patients. It is worth emphasizing that the goal presented here is not to make all nurses hold the same opinion in any direction, but rather, to create a working environment in which people of all opinions can transparently work in harmony, comfortably and full-informed. Namely, one option could be creating largely-accessible open discussion opportunity amongst health care professionals and caregivers regarding this currently heated topic. Here, nurses of all opinions can engage with AS where they can both voice their opinion and encounter the range of opinions that exist, importantly, within a space removed from formal responsibility caring for patients. In this way, all parties can actively engage with the topic in a way that respects their personal boundaries and beliefs *while also* expanding the realm of their experiences with the topic of AS.

Such a suggestion is reflected in the open-answer question about further support needs, in which numerous of the responses indicated the desire for increased discussion and collaboration with colleagues. Exposing these topics openly would reduce the ‘taboo’ nature of this topic that some nurses indicated being underlying present amongst staff (for example, the individual who reported feeling hesitant to engage with patients in fear of becoming the “black sheep” on the staff team for assisting).

Finally, it’s worth mentioning that cultural dynamics existing in hospital hierarchies, patient and colleague relationships, religious institutions, Austrian norms, and more all contribute to the culture in which nurses’ AS-related interactions are embedded. In return, nurses - who are embedded within this societal AS culture - have a large impact in creating the culture around AS on the more *individual* scale through availability, accessibility, and quality of care they provide to patients. Therefore, creating regular opportunities for open, transparent, and welcoming engagements with AS on the larger scale first could provide a favorable environment in facilitating AS practices on the individual nurse-patient level.

4.1.2. Official Decision-Making Process

Explanation

Another finding which can be analyzed through the enactivist framework of the self-created reality is the question of who determines whether a patient qualifies for an AS-induced death. It is evidently clear from the results of the study that the majority of nurses are not satisfied with the current official decision-making process, which solely outlines the role of the physicians **[Figure 4]**. Quantitative data shows that nearly three-quarters think the decision should be made by a board comprised of an interdisciplinary committee of relevant disciplines (I.e. nurses, doctors, psychologists, ethics professionals, etc.), as is the case in several other AS-legalized countries such as Colombia and Australia (Emanuel et al., 2016; O'Connor et al., 2021). Open-answer responses asking how the decision should rather be made reflect a similar idea, in which a repeated call for interdisciplinary collaboration is seen.

One interpretation of this data could be that nurses feel the current method of decision-making does not appropriately reflect the team-based values and practices of the hospice and palliative care system. In palliative care, strong emphasis is placed on the collaborative efforts of diverse health care professionals, such as nurses, psychologists, physiotherapists, theologists, and more, to provide the patient with a personalized health plan best suited to their wishes. Therefore, it could be that palliative care's collaborative philosophy is missing from the current decision-making process by having physicians solely determine the eligibility of patients requesting AS, perhaps leaving nurses dissatisfied and underrepresented.

Additionally, in a balanced system, literature on enactivist theory states individuals are responsible for creating (or 'enacting') the world in which they are situated (Froese & Di Paolo, 2011). While this notion in literature mostly focuses on the creation of the individual and personal 'world' as it is perceived by each person, in this case, it is perhaps relevant to apply this notion to the wider-scale, more conceptual aspect of reality as well. For example, we can consider nurses' responsibility in enacting not only their personal 'reality' as it exists solely to them, but also in the creation of their larger, shared workplace environment as well through their contributions in this shared context. Here, over half of respondents reported not being involved in the decision-making processes in the last year, despite roughly the same number believing nurses should be involved in the official legal process. If nurses feel they are not involved in the creation of their own reality, yet are subject to the consequences of the system every day, feelings of frustration and helplessness may arise. It would follow then that nurses want the agency to impact and create the workplace world which impacts them daily, and also reflects the greater palliative care values of collaboration and interdisciplinarity.

Palliative care nurses are very highly involved in understanding the complexities of the daily lives of each of their patients (Butler et al., 2018; Cloyes et al., 2014; Richardson, 2023). Consequently, they are faced with the bulk of conversations, questions, and requests for AS (as seen in the data, where over 60% of nurses had at least one patient who requested AS in the last 9 months) (Richardson, 2023). Despite this, Austrian nurses' formal role is omitted from the legislature. As stated, this is a commonly documented issue in other AS-legalized countries, as concluded in one comprehensive study which stated that "limited and highly variable nursing policy highlights the lack of clear guidance available to nurses," and that "there is a current lack of consistent nursing voice in the development of legislative change, and in providing direction and support for the nursing profession" (Richardson, 2023, p. 117, 125). In this way, they are highly impacted by the changes in their environment yet are not clearly or *formally* able to contribute in return. Thus, for a balance in the mutually-defined system to be achieved, an adjustment to the current system must be made.

Suggestion

The suggestions for future improvement founded in enactivist principles in this realm are two-fold: Firstly, make the role and expectation of nurses more explicitly clear in the legislature, and secondly, change the decision-making process for determining AS patient eligibility.

Beginning with the first point, I argue that it would be helpful for nurses to understand far more explicitly what is expected of them in the AS process. This change is undoubtedly needed, as more respondents stated the process being more unclear than clear to them **[Figure 7A]**, and over half indicated 'strongly agreeing' to desiring more clarity overall. This likely impacts not only their sense of capability, but also their ability to provide care as stated by one respondent who said, “I lack the clarity on all levels ... the implementation is, if at all possible - very difficult.”

The enactivist claims that we choose how and to what extent we engage with our world, and the outcome of this interaction is what makes up each individual’s reality (Di Paolo & Thompson, 2014). The desire for clarity of the AS process could result from the experienced difference between what is demanded of them informally (when interacting with patients on the day to day level) and formally (as denoted in the official legislature). Such a gap could leave nurses confused in knowing what level of engagement is expected of them with regards to such topics, and consequently, a dissonance between the engagements of their lived and formal realities. Making explicitly clear guidelines outlining their unique role would alleviate such ambiguity, provide guidance in navigating patient responsibilities, and allow nurses to better establish and understand where the appropriate boundaries lie when defining their domain of possible interactions.

Secondly, I understand that suggesting a systematic change to AS practices might seem drastic, but I only intend to present conceptually beneficial adaptations to consider (both for the nurses’ position and the AS system functioning overall) as they are informed by enactivist principles. It is important for the continuous improvement of the AS system to consider the feedback from those affected by its consequences every day. Therefore, when taking into consideration the strong feedback from the questionnaire, a well-rounded, team-based decision involving the nurses is clearly the most desired possibility amongst nurses for the decision-making process **[Figure 4]**. This shift would formally acknowledge the already-integral role of nurses in patients’ lives (Richardson, 2023). Additionally, as stated before, a similar committee-based system is in place in other AS-legalized countries, providing an established reference in which the change can be based (Emanuel et al., 2016; O’Connor et al., 2021). It would also fulfill the commonly-requested desire for the inclusion of an ethics committee as expressed in the open answers to the questionnaire.

Finally, in considering the enactivist principles at play, we can remember that the world is not a distinct and defined entity separate from the perceiver, but rather, is created by each individual via their interaction and thus perception of it (Hutto & Myin, 2013). In theory, if nurses feel a sense of agency in determining their world (for example, by being formally involved in the decision-making process), feelings of confusion, tension, or being subject to a system could be lessened, and consequentially, their perceived ('self-created') reality could be more satisfactory. It is important to provide such a space for nurses to employ their personal and extensive knowledge of the patient in consideration if they choose, as ideally, it would facilitate feelings of capability, acknowledgement, and a restored self-determination within their lived reality.

4.2. Experiences of Nurses // Meaning and Sense-Making

4.2.1. Comfort, Preparedness, and Training

Explanation

Enactivism tells us that the world is full of affordances which are meaningful only as they are dependent on the actions of the agent (Hutto & Myin, 2013). The relationship an agent makes with their world then, through chosen and lived experiences, drives their constantly reformed notions of meaning. This has large implications in current palliative care practices when considering the engagement levels of nurses with AS-desiring patients. Undoubtedly, there are many avenues through which nurses may engage with the controversial issue of AS, for example: discussion by colleagues and community, news reports, formal information sessions and trainings, television and media, and so on. These societally-present opportunities to engage with the topic of AS, and their resulting choice of engagement, present affordances through which a nurse may form their self-created, meaningful reality.

As stated in the introduction section of the paper, generating meaning of such affordances through sense-making processes is the most basic cognitive processes of a living system in the eyes of an enactivist (Di Paolo & Thompson, 2014; Froese & Di Paolo, 2011). Action is *necessary* for the environment to be present within the cognitive realm of the agent, to which they can then continually assess significance and meaning to their experiences. In other words, an individual cannot make sense of something without first interacting with it.

Further, the notion of *embodiment* becomes increasingly relevant when considering the ongoing sense-making processes of an agent perceiving the consequences of their actions. The term 'embodiment' requires the inclusion of a body equipped with sensorimotor detection, capable of interacting with the environment, thus involving the organism's numerous complex bodily processes into one's cognition (Varela et al., 2017). Further, the enactive theory of sense-making as argued by Colombetti (2014) says that *affectivity* is an essential and integral part of an agent's mental (and thus more basically, sense-making) processes. This suggests that affective processes are inextricably, inherently at play in the sense-making processes of autonomous, adaptive agents, such as nurses.

To support this claim, Froese (2015) draws upon the integrated theory of neuroscience as described in the paper 'The Emotional Cognitive Brain' (Pessoa, 2013). Here, through a lens of cognitive neuroscience, research findings are critically interpreted to suggest that "perception, cognition, emotion, and motivation do not refer to essentially distinct categories. Instead, they are overlapping aspects of a complex network of mental processes in which one aspect can temporarily become more expressed than the others depending on the circumstances, but in which none can be completely isolated from the others" (Froese, 2015, p. 2). Importantly, when considering the overlap of this rationale with enactivist theory of sense-making, affectivity is always an implied and essential aspect of mind.

Such insights are directly relevant to the current study when considering the formation of a meaningful point of view by nurses engaging with AS, in which cognition, perception, emotion, and motivation are essentially present without isolation at any given moment. As stated by Depaz & Varela (2005, p. 61), "emotions cannot be seen as a mere 'coloration' of the cognitive agent … but are immanent and inextricable from every mental act." In spite of maintaining conscious attempts at professionality and neutrality, the integrally embedded emotions a nurse, as an embodied agent, may hold on the controversial topic of AS will necessarily play a role in the enaction of their world. This becomes relevant when comparing to their perceived level of influence over patient's decisions regarding AS, where the overwhelming majority of nurses believed to have been 'uninfluential' **[Figure 6A]**. I do not intend to discredit here the ability of nurses to maintain professionality in their role or question the accuracy of their self-awareness; Rather, I only wish to acknowledge the difficulty one must face in constantly putting their own beliefs aside in reference to such an ethically-charged topic if said emotions are opposing their demanded responsibilities. Their emotions - as an integral part of mental processes- within settings of patient requests for AS to some degree must be present and involved in their consequential behavioral response, as their *self-established* domain of realities defines the range within which they are capable of naturally acting.

Similarly, it's understandable that the integral role of affectivity in sense-making processes could induce feelings of stress in the roughly one-third of respondents who indicated having a stance on AS against the recent legalization **[Figure 2D]**. Given the naturally emotionally-charged nature of AS as a complex topic, personal wellbeing may be affected as these nurses are expected to face demands opposing their internal beliefs, as we will see in the next section on health and wellbeing.

Another relevant enactivist consideration in reference to the topic at hand is that its 'meaning,' as it is defined individually by each nurse, is held within in the relational domain between nurses and their shared environment with others. Opportunities to make meaning of AS come forth through one's relational interactions with the patients, colleagues, bosses, etc., which continually contribute to one's assessment of significance of lived experiences in relation to their held attitudes and beliefs. This also implies that ethical notions of AS as indicated within the legislature are only made meaningful or 'real' as they emerge from relational collaborations decided upon by Austrian communities.

When applied to the current context, we can see that the legalization and resulting objectively-defined ethical definitions of AS are introduced to the environment, relational domain, and thus, the cognitive realm of the nurses. As a nurse familiarizes with the new process through their critically *embodied* experiences involving AS, greater clarity of one's personal meaning of AS would form. It is then plausible that stressors caused by unknown factors of the AS processes (as abundantly indicated in the open-answer responses) are alleviated as it materializes into tangible existence and increases familiarity. One interpretation of results indicates such a trend here, where a substantial increase of nurses reported feeling more prepared to hold AS-related conversations with patients as compared to the onset of legalization. Thus, the results of nurses' experiences of the last year could be understood by the following possible interpretation; Embodied experiences interacting with AS over the past year have increased the opportunities with which one can interact and thus make sense of AS, therefore alleviating tensions of the unknown by developing one's embodied understanding of the topic.

However, a gap still seems to exist in the embodied knowledge acquired by nurses over the last year. Though nurses appear to feel relatively more prepared holding such conversations, as would be expected after encountering such scenario more frequently, a strong demand for technical clarity in the process remains. As stated earlier, the overwhelming majority (nearly 80%) expressed a desire for explicit knowledge of the legal procedure and want more clarity on the process overall.

Additionally, when asked about their comfort level discussing AS-related topics with various work-related populations, nurses reported feeling most comfortable discussing with colleagues in a professional manner, as compared to patients or bosses. Though the reported difference in comfort level between these populations was not necessarily drastic (with comfort level of other groups like 'colleagues – personally' and 'bosses – professionally' being indicated only 5% less in comparison), such finding may still hold some insightful implications. Taken together with the abundant open-answer requests for more supervision, for guidance in navigating patient conversations, and expressions of distress in knowing how to best help desperate patients, two possible explanations for the resulting tension can emerge.

Firstly, lack of clarity on formal AS procedures may cause stress when navigating an incompatibility between personal and societally held meanings of AS. The legalization of AS is a way of capturing and formalizing societal standards of ethical practice. Laws upheld by society are considered the collective ‘truth’ and the objective standard by which communities are expected to refer. However, on the individual level, we’ve discussed that ethical notions are held in the relational domain and are defined by individuals with respect to their experiences. It may often be the case that the two notions (those being societal/legal and individual/personal) of ethical standards are compatible (for example, if one believes thievery is unethical, as is reflected in the court of law), but as we have seen in the widespread opinions of AS practice, this may not always be the case **[Figure 2D]**. For example, in the scenario that personally formed meanings of topics like palliative care values contrast with the new legal standards and practices, unsureness in knowing the appropriate or expected behaviors with patients may arise. In such a case, taking into consideration the beliefs and experiences of those subject to the consequences of the system at hand becomes important to avoid dysfunctionality and burnout (Yang & Hayes, 2020).

Secondly, it's plausible that unsureness on formal AS policies may lead to lack of comfort discussing AS in settings where knowledge and responsibility is expected of them (such as in working with patients and families). For example, one respondent in one open answer question reported, “I was impaired by the fact that I cannot provide precise information on questions from my patients... The insecurity and the unknown affects me.” Though AS has increasingly entered the realm of nurses’ lives relative to the time before legalization, leading to increased feelings of preparedness as seen above, nurses may still feel discomforted by the responsibility on the interpersonal level with patients as a result of not knowing the *formal* procedures demanded by AS. Without the ability to completely comprehend their full domain of role expectations, it will remain difficult for nurses to feel comfortable in such situations moving forward.

Suggestion

The suggestion enactivism can pose to assist nurses in navigating potential gaps between personal and societally-held meaning of AS is simply to systematically provide more explicit information to nurses. Regardless of their opinion, opportunities to gain more information would require interaction of the nurses with AS procedures, thus providing opportunity for deepening both technical and personal meaning of AS. Examples of ‘access to more information’ could include more mandatory and volunteer training opportunities, informational events in each *‘Bundesland’* or ‘state’ of Austria, online courses, trained and informed personnel in the workplace, free informational hotlines or websites, and more to this effect.

Such an idea is supported by both the quantitative and qualitative data provided by this survey, both of which strongly emphasized the benefit and demand of resources. For example, nurses who attended either mandatory or voluntary training almost unanimously reported finding them helpful (with at least two-thirds indicating it as ‘*very helpful’*) **[Figure 7C]**. Similarly, many of those who indicated having increased their comfortability and support for AS over the year reported feeling “less afraid” and are “seeing it more soberly,” emphasizing the benefit that direct interaction has for personal confidence in their role.

Despite its obvious benefit, almost 30% of nurses indicated having no training at all [**Figure 7B]**. In the absence of any straight-forward and objective input telling nurses what is expected of them, the majority of interactions from which these nurses can make sense of AS are likely left to the personal interactions with colleagues and patients. Such an environment already demands responsibilities and expectations of them, removing the chance to engage with AS as an *individual* but only in their role as a *nurse*. Thus, little to no opportunities arise for personal exploration of the meaning of AS, for when they are engaging with patients, their role demands that they hold responsibility of being an informed, neutral, confident professional able to provide fully informed care. This may explain the *very* strong demand seen in the open-answer responses asking for further resources of all kinds, in which almost every response indicated either more information, training, discussions, supervision, accessibility to informational resources and more. Namely, the need for more information could reflect the desire to first fully conceptualize one’s personal meaning of AS, and further, how to navigate said meaning in relation to one’s responsibilities and expectations from the system.

This very issue has been a commonly reported development following the implementation of AS in other countries in the past as well, such as Australia and the Netherlands (Cayetano-

Penman, 2021; Inghelbrecht et al., 2009; Sellars et al., 2021), in which their comparable follow-up studies' most prominent suggestion for AS system improvement was the need for clarity of nurse role expectations. Similarly, in one systematic review addressing the status of all currently AS-legalized countries concluded, "Nurses need to be informed of existing legislation and provided in-depth education and professional guidelines to help direct action." (Cayetano-Penman et al., 2021, p. 66). Without such knowledge, nurses can feel conflicted on how to navigate their new role while respecting both personal and professional beliefs.

In sum, enactivist theories can positively influence the rollout of AS by suggesting heightened interaction in a neutral, informational setting, as this creates space for nurses to directly engage with and make sense of the new law. More interaction leads to more understanding, clarity, and hopefully comfortability. Further, such a sense of understanding and comfort within nurses is important for the quality of care provided to AS-interested patients and thus more broadly, the overall implementation process of AS in Austria.

4.3. Further Support Needs // Adaptation

4.3.1. Health and Wellbeing

Explanation

Finally, an important applied objective of this paper is to collect and address the support needs of nurses. Such a goal can be effectively addressed when approaching the nurses as adaptive agents, who naturally regulate their internal and external states (via their attitudes and behaviors, respectively) in an ever-changing environment (Froese & Di Paolo, 2011). During adaptation, agents naturally realign their internal state in response to 'perturbations' in the environment, which in this case, could take the form of nurses adapting to changes in their role, responsibilities, and overall working environment (Froese & Di Paolo, 2011). They are adaptable beings via their interactions with the environment, and the support they seek can be seen as a reflection of desired measures to help alleviate change-induced stress.

Therefore, we summarize here the support nurses requested, as gathered from the survey, to be interpreted as exposing their points of greatest difficulty in adjusting to the new palliative system. As stated before, more support in understanding the AS process is clearly needed, as indicated in the overwhelming majority agreeing for more clarity on the regulations. Questions aimed at identifying the health and wellbeing of nurses resulting from AS legalization indicated similar results, in which participants who experienced a change to their personal state were more frequently affected negatively than positively (though it is worth noting that nearly four-fifths of participants indicated no change at all) **[Figure 5]**.

Further, responses to open-answer questions exposed the quality and extent to which individuals were personally affected by such change in their workplace. When asked to expand upon how personal wellbeing was affected, responses were almost unanimously negatively charged. Numerous responses indicated a personal, moral, or existential issue confronting AS in their workplace. Many also worried that the very purpose and fundamental values of hospice care are being overthrown by 'giving up' on finding a solution for symptom relief and providing a patient with a comfortable life. For example, one individual stated, "I feel the inherent value and desire of hospice and palliative care diminished." It could be that these individuals feel their most foundational duty as a health care professional under the rule of the medical Hippocratic Oath – to respect the life of the patient and provide support – is undermined by AS being a legitimate option, as has been the case for some medical personnel in other AS-legalized countries (Potts, 2021). Individuals holding this belief would understandably have great difficulty adjusting their mental states to changes brought by the new law, as it would mean a substantial shift in personal values and principles.

Other responses described symptoms more closely related to anxiety, including trouble sleeping, stress in the workplace, and worrying about the future in terms of how the law may develop (for example, reasoning resembling the thought, 'if the door is now open, where will it end?'). Finally, a large proportion of the responses showed concern for the possible pressure inflicted on their patients (an unsurprising result, given the empathetic and caregiving nature of their role), for example, in the case that patients fear being seen as a burden to others for choosing to stay alive when death is now an option. All of these responses taken together expose the types of difficulties one may experience in adapting when facing such a drastic change in the workplace.

Interestingly, reactionary adjustment to legalization can be conceptualized as occurring not just on the caregiver's individual scale but on the societal level as well, where the legalization of AS also imposes a change on the previous norms of the Austrian medical system. For example, care centers will need to change to the allocation of resources, spaces, job qualifications, pace of caregiving, role expectations, and more, reflecting the numerous adaptations demanded of nurses. The parallel nature of this issue on various scales reflects the multi-level thematic constancy of fundamental enactivist principles, which span widely from cellular to societal organizations. Concepts of enactivism founded on the biological, cellular level can in some ways have relevance to theories of social cognition, for example. Such conceptual transcendence is seen in the present study, where parallel reactionary patterns and effects are had one the individual and societal scales.

In any case, these changes to both personal wellbeing and systemic functioning for both individuals and the wider healthcare system, respectively, can be seen as symptoms of the internal realignment of balance as adaptation to the new reality occurs. It is clear that nurses, as embodied agents, pressured to mentally and behaviorally adapt to a change in their professional role, would benefit from external support.

Suggestion

In theory, adaptation of oneself to an environment is a means of reducing overall stress by fitting one's behaviors to the environment more harmoniously (Froese & Di Paolo, 2011). Therefore, the suggestion posed here is the allocation of increased resources to palliative care wards, as this could lessen some of the adaptive burden by systematically removing stressors impeding nurses' ability to adjust to their new responsibilities. Matters out of nurses' control which may dampen their ability to adjust to AS legalization should be reduced, such as the availability of beds and physical space for patients, personnel present to manage all relevant caseloads (and with that, the time allowed in a workday to complete tasks), and more. Additionally, the support of a psychologist and consulting supervisor could help nurses feel less alone and more capable of navigating the new system. Further, consistent training might increase feelings of confidence in the responsibilities of their role. With enough supportive resources like these, the stress of their changing environment would hopefully be lessened, supporting them with the time and space needed to adjust to drastic changes in their role as a caregiver.

Lastly, feedback from those directly affected provides the most valuable insight to understanding necessary changes for progressing AS on the wider scale and will be critical for optimizing the AS system in Austria. It is therefore essential to continue collecting feedback from nurses, both so they receive the necessary support and that the AS system in Austria is optimized. As previously stated, adaptation must occur both on the individual and societal scales so that AS implementation is a continuous process of improvement over the next decades for the benefit of all.

4.4. Future of AS & The Multi-Agent System

So far, this discussion has been using the enactivist theory of mind as a framework for both explaining and providing suggestions for the benefit of future AS rollout processes in Austria. This final section serves to address more broadly the future of AS, not by providing specific actionable suggestions as before but rather to discuss how the multi-agent system theory of enactivism can provide a conceptual organization to the higher-order structures of AS moving forward. Throughout the previous subsections, notions of the unfolding AS culture and mutual dynamic coupling between an agent and their environment have been touched upon briefly and will be further expanded upon now.

Beginning with the definition of a multi-agent system that we have defined earlier, we can quickly see that all components are met in the case of the present study, being: “an interaction process that is constituted by the mutually coordinated behavior of two or more adaptive agents whereby that interaction process is itself characterized by an autonomous organization” (Froese

& Di Paolo, 2011, p.12). In this case, the agents include those involved in the system: nurses, colleagues, patients, caregivers, family members, etc. We will assume that they are indeed 'adaptive agents' (given this is a basic requirement of enactivism to be a living, cognitively functioning being). Thus, the coordination of multiple agents' behaviors in relation to AS-related topics through their interactions results in the emergence of an autonomously organized system. We can say that the agents in this newly autonomous system are engaged in participatory sense-making, given that their individual sense-making processes are affected and new domains of sense-making are achieved (Di Paolo & Thompson, 2014). As such, the autonomous structure of these shared engagements in the relational domain is constituted by the behaviors of the component adapting, autonomous agents, thus defining the multi-agent system of AS.

In order to ground these concepts in real-life situations, let's briefly take the example of a nurse engaging with a patient who desires to utilize the new AS system. When the two are directly engaged with one another in relation to the topic of AS, each individual reacts to the expressions of the other in real-time. Through their mutual engagement, both individuals are automatically using the actions of the other as sensory input from which to develop their understanding of AS. If, for example, a nurse responds to the prompt of AS with slight stand-offish motions and short, pessimistically-charged statements, this contributes to the body of information their patient uses to understand the current state of the practice. In this way, sensorimotor coupling, (including the detection of subtle, implicit verbal and body language cues) may occur in which the behavior of one agent directly influences the sense-making processes of the other (and vice versa), joining the two in a shared form of sense-making where the actions of each agent are essential for said multi-agent system to exist as is (Di Paolo & Thomson, 2014). Such participatory sense-making allows opportunity for information which would otherwise be unavailable, such as the nature of the immediate reaction by the nurse or the personal reasons given by the patient. Interaction is a *necessary* occurrence for this information (or any other information within a range of possibilities) to become realistically present to each person's continual understanding of AS. Therefore, the two in this case are engaged in a multi-agent system of participatory sense-making.

Expanding upon this example, we can understand that the interactions of all individuals embedded in the healthcare system (for example, nurse-to-nurse, nurse-to-patient, nurse-to-colleague, etc.) are all components of a much larger, interconnected multi-agent system. In each case, and depending on the given degree of directness, each interaction influences either (I) the environment, which in turn influences other individuals existing within the same environment, or (II) other agents directly.

In the first case, as shown in **Figure 1A** of the Introduction section (p. 19) the shared environment is continually changing and affecting each agent based on the adaptive actions of each agent onto the system (Froese & Di Paolo, 2011). Both parties are embedded in this environment and are therefore always affected by - and contributing to - its multi-agent culture, even if not through direct contact with others. Though not exclusively, I believe it is largely the adaptive behavior of nurses in exactly this type of multi-agent system through which the culture of AS in Austria will emerge in its autonomous nature.

In the second case, as shown in **Figure 1B** of the Introduction section (p. 19), where individuals in the multi-agent system are directly influencing one another through real-time sensorimotor coupling, coordinated sense-making can occur. Through the often very intimate engagement of nurses in the lives of their patients, it may be that such joint sense-making is the basis for the strong sense of empathy in being able to understand a patients' reason for choosing AS, regardless of one's own stance on the issue **[Figure 3]**.

Additionally, as we have discussed earlier, recognition of the other as such is a condition for a *social cognitive system* to be met (Froese & Di Paolo, 2011). The findings of this study support the notion of a social cognitive system coming to form in such cases where nurses are able to understand and empathize with the values, attitudes, and reasoning of their patients (the other autonomous, adaptive being in this case). As previously stated, it is not the intention here to elaborate on the intricacies of the social cognitive system, but recognition of its potential relevance at least acknowledges the mutual, complex, and constantly developing nature of the social relationships in reference to the topic at hand.

Conceptual organization of higher-order structures as interpreted by the theory of the multi-agent system also supports previously provided suggestions for increasing the prevalence of AS-related opportunities in the lives of nurses through informational and discussion-based events. Engagement with others regarding the topic of AS will be important not only in shaping nurses' attitudes and feelings of comfort with the topic moving forward, but also more widely in contributing to the culture of AS in Austria. Again, the intention here is not to make caregivers of a same opinion of AS in any direction, but in this case is rather to provide nurses with increased opportunity to understand both their role in the system and further, the chance to engage in coordinated sense-making with others in a similar situation to them.

Finally, it is worth acknowledging that the culture of AS will simply take time to form. It involves the collaboration of a wide range of individuals both professionally and from the community over a very complex, ethically ambiguous, and often emotional topic. Implementation of such system demands diligence and attention to occur smoothly over at least the first two years (O'Connor et al., 2021). As such, it is important to attend to the needs reported by nurses as their high level of physical presence in the daily lives of patients will have notably significant weight in shaping the culture as a whole. In return, we can see that they're continually required to adapt themselves to the changes resulting from the AS system, making it again evidently important that their further support needs are regularly recognized and understood.

4.5. Limitations and Future Directions

It is worth mentioning possible limitations of the present study. Firstly, since the data was collected after the legalization and implementation of AS in care facilities, questions addressing the attitudes prior to implementation are based only on retrospective recollection and may not be fully accurate. Despite having a relatively high rate of valid responses after filtering for completeness (84.5%, n = 283), of course larger population samples hold stronger statistical strength and would ideally be collected in the future. Also, despite all states of Austria being represented, the use of digital outreach for the survey could have created a biased sample toward those more regularly using technology, for example, favoring those in the metropolitan area or of younger age. Similarly, the use of opt-in methodology may have created a biased sample toward those having relatively stronger opinions of the topic. Additionally, it may be possible that various understandings of some terms like ‘Assisted Suicide’ or ‘death wish’ exist between participants, given the wide-ranging use of such phrases across different circles. However, this factor is hopefully miniscule, since clarifying definitions of terms were always provided where necessary. Lastly, findings are limited solely to nurses and thus do not provide meaningful insight toward the experience of other healthcare professional groups also involved in the process.

Despite these potential limitations, if such considerations are kept in mind, I believe the findings of the present study can still provide productive and valuable information for the present state of the AS system now and when comparing against future studies in Austria. Optimal functioning of the AS system will require regular reflection, adaptation, attention to feedback, and collaborative effort from both governmental bodies and a wide range of health care professionals (O’Connor et al., 2021). Future studies within Austria can use the questionnaire (with small adaptations where necessary) to address the changes in nurses’ experiences and attitudes over time. There is also potential for other countries considering legalizing AS to benefit from the review detailed here for proactively avoiding common issues and optimizing their implementation process from the start.

5. Conclusion

Assisted suicide both in Austria and elsewhere is a highly prominent and convoluted topic which requires continual feedback-based adjustment to function properly as intended. Within the first year of implementation, majority of nurses from all states of Austria have encountered patients expressing a desire for this option, showing its prevalence in public discourse and in medicine. Still, stances on the legitimacy, justification, and validity of AS as a medical option continue to be widespread, and the knowledge of system processes remains very unclear to professionals in the system.

Given the strong involvement of ethical considerations, there are many lenses through which we can consider the facets of AS's influence in society. This paper has attempted to show the merit that the philosophical enactivist theory of mind can lend to both explaining the lived experiences of those in the system, as well as formulating newfound solutions to alleviate tensions reported in the first year of implementation. As enactivist ideals explain basic cognition through the fundamentally relational interactions of an embedded agent (in this case, nurses) with their surrounding world, its principles can be broadened beyond the basic cognitive science paradigms into fields like medicine.

For example, many implications can be drawn when we understand the fundamental idea that the world and its perceiver are not isolated entities, but rather are mutually affected, autonomous systems in constant interaction. This implies one is (at least in part) responsible for the ongoing creation of the other via a dynamic system of mutual interaction in the shared environment. Thus, an agent's perception of the world will essentially be defined by the range of their chosen interaction with their environment, and in this way is 'self-created.'

When applied to the present context, we can then understand that nurses create their own perceived reality of AS through the manner in which they actively engage with AS-related topics. Nurses choose how and to what extent they interact with the AS-related topics present in their world, and the feedback from that interaction will inform their perception of the issue. Still, the entire context and culture within which a nurse is embedded provides the range of possibilities from which they can choose to engage or not. As such, if AS is removed systematically from the regularly encountered reality of the nurses, as is the case in some large workplace establishments in Austria, direct interaction with this topic is far more removed, and the adaptation of internal attitudes and beliefs are less likely to naturally occur. This could at least in part provide an explanation for the significant lack of change in beliefs from nurses despite one year of AS implementation.

As I stated earlier, enactivist principles state that action is necessary for the environment to be present within the cognitive realm of the agent, from which they can assign significance and meaning to a topic (Froese & Di Paolo, 2011). As a result, I have advised here that neutrally-positioned, regular opportunities (such as trainings, informational events, open discussion spaces, informational resources, specialists within the workplace, etc.) are provided on a regular basis to productively encounter AS, alleviate tension created by unknowns, and facilitate heightened personal understanding of the topic. Regardless of which personal opinion is held, providing opportunities to become informed and understand the subject through direct interaction would ideally remove some of the current uncertainty reported in the questionnaire.

It is my sincere hope that these points are at the very least considered and addressed in the coming years, for the sake of healthcare professionals' wellbeing, confidence, support, and comfort in their workplace, for the quality of care provided to patients in Austria, and for the harmonious functioning of Austrian medical systems in general. Here, we can benefit from enactivist insight which tells us that nurses are embodied individuals embedded within a society full of cultural norms, whose perception of AS can be heavily influenced by the "complex processes around social, cultural, religious, and legal/ethical rules and guidelines held by the countries of residence" (Cayetano-Penman et al., 2021, p. 82). Such acknowledgement importantly brings forth the role that Austrian societal values inevitably have on nurses, thus identifying the contextual impacts within which nurses face AS every day.

In return, their highly interactive role in palliative care makes their position of particular focus (Cloyes et al., 2014; Butler et al., 2018; Richardson, 2023), thus making them distinctly responsible for contributing to the culture of AS in Austria. Mirroring the AS rollout in numerous other instances, and despite its increased prevalence in palliative care, little reference of the formal role of nurses is addressed legally (Richardson, 2023). This demands clarification at the very least, and ideally, formal inclusion of their role in AS practices (Richardson, 2023). For these reasons, it is critical for the progress of AS in Austria to assure that nurses, regardless of their personal opinions, feel prepared and able to support the goals of AS, as they are inevitably significant players in the creation and inclusion of AS in Austrian society.

6. Acknowledgements

I would like to thank Mag. Dr. Elisabeth Zeilinger from the Palliative Care Unit at the Medical University of Vienna for her regular supervision, consultation, and contribution throughout the whole process. Additionally, thanks to Nadine Brunevskaya (in survey creation and distribution) and Johannes Polwin (in data analysis) for their valuable collaboration in this project.

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8. Appendix

8.1. Abstract (*German Version)*

Assistierter Suizid (AS) gewinnt weltweit zunehmend an Popularität als medizinische Option für Patienten, die an einer unheilbaren Krankheit leiden. Seit der Legalisierung und Umsetzung in Österreich im Jänner 2022 hat keine Studie den Stand des Rollout-Verfahrens untersucht. Die Auseinandersetzung mit den Einstellungen, Erfahrungen und Bedürfnissen der betroffenen Mitarbeiter ist aus vielen Gründen von entscheidender Bedeutung, darunter die reibungslose Integration und Akzeptanz des umstrittenen Gesetzes und die Längsschnittbewertung der nationalen Fortschritte im Laufe der Zeit. In der vorliegenden Studie wurde die 'enactivist theory of mind' – ein aufstrebendes Paradigma im Bereich der Kognitionswissenschaften – als Rahmen verwendet, um die Ergebnisse zu erklären und Vorschläge für die Zukunft von AS in Österreich zu machen. Pflegekräfte in der Palliativ- und Hospizpflege, die eine stark eingebundene, aber unklar definierte Rolle haben, wurden in dieser explorativen Querschnittsstudie durch einen Fragebogen angesprochen, der an alle relevanten Pflegeeinrichtungen in Österreich verteilt wurde. Zu den wichtigsten Ergebnissen gehören die breit gefächerte, aber insgesamt unterstützende Haltung von Pflegekräften gegenüber AS, der Wunsch nach verstärkter Zusammenarbeit und Klarheit über die Prozesse von AS und die persönlichen Bedenken hinsichtlich verschiedener Aspekte des Prozesses insgesamt (z. B. Auswirkungen auf das Wohlbefinden des Patienten, zukünftige Entwicklungen und Verantwortlichkeiten, Mangel an Ressourcen, usw.). Basierend auf den Grundprinzipien des 'enactivism' liefert diese Studie eine Interpretation der Ergebnisse, gefolgt von fundierten Vorschlägen zur Verbesserung von Ressourcen, Möglichkeiten und Kommunikation mit Pflegekräften. Solche Interventionen werden für die Verbesserung der Umstände von Pflegekräften und den zukünftigen Einsatz von AS in Österreich wichtig sein.

8.2. Full questionnaire (*English version)*

(link to document) Questionnaire_English.docx

8.3. Full questionnaire (*German, original version)*

(link to document) Questionnaire_German.docx