Clinical Exploration of Buddhist Psychology

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> All faults and benefits of samsara and nirvana, all disadvantages and advantages, all totally depend on the mind. So therefore, if you are intelligent, it is important to know how mind functions.
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> - Kachen Yeshe Gyaltsen, *A Necklace for the Lucid*, 1713-1793

In the Buddhist view, mind or consciousness is the governing aspect of how and what the experience of reality is to individual beings. Governing in the sense that it precedes all bodily and verbal expressions and has been intimately involved in the totality of life experience; though not always explicitly identified by the experiencer. This locus of control if properly understood, trained, and cultivated can have profound results on the lives of individuals. The intent of this paper is to first explore the definition and foundational experience of consciousness through its descriptions in Abhidharma studies found in Buddhist tradition. This description of consciousness will then be used to reflect on current understanding of schizophrenia spectrum disorders (SSD), in particular relation to the concept of self that typify those schizophrenic disorders. Where applicable, mention will be made to integrate this conceptualization into clinical practice and discuss any potential research that could validate its application.

The fundamental concept of mind in Buddhist understanding differs from Western perspective, in that mind is quantitatively different from physical matter (i.e., form) by a character of intangibility (i.e., formless). The 8th century Indian scholar and abbot Shantirakshita is quoted to say: “Mind is not a form. Mind is the opposite of form. Whatever is the opposite of form has the nature of the mind.” (Gelek, 2005, pg. 42). This concept of mind’s intangibility is distinctly contrary to the modern Western conceptualization that consciousness is a product of biology, specifically produced by the neuroanatomical structures in the brain. The distinct

difference is highlighted by the topic of product and causation, that in the Buddhist view there is a reasoning through formal logic that a formless phenomenon cannot be caused by form but instead by a similar formless cause; in this instance a previous moment of mind (Jacobs, 2017). The natural conclusion from a view of formless causation is that at a foundational level consciousness is not ultimately dependent on neuroanatomical structures for its existence. However, far from disavowing neurobiology and brain functions Buddhist thinkers embrace empirical findings to better explain the intricate expression of consciousness through these physical structures and aspects (e.g., five senses) of consciousness, that are indeed dependent on a physical support for their proper functioning.

An important element of this viewpoint of mind's formless causation, and one that is shared with the general Western perspective of chemistry and particle physics, is the notion of a continuum of refinement between gross and subtle states of existence. Physical form has a range from the gross states of objects inhabiting our world to the subtler states of molecules, atoms, and now even quantum vibrational strings that comprise them. Mind similarly has a range from the gross states of our waking senses (e.g., smell, taste, touch, etc.) to extremely subtle states that border on unconsciousness as we fall asleep (Gelek, 2004). It is in this context that the enduring aspect of consciousness that doesn't depend on physical or biological support is to be understood; specifically, it is described as being an extremely subtle state of mind that could be likened to a type of enduring psychic energy or contained wind (Gelek, 2004).

Following will be a brief history and description of the content of Abhidharma studies, the Buddhist psycho-physiological structure of consciousness and the body, a focused look at primary mental factors, and a section reflecting on the current understanding and conceptualization of schizophrenia. Note that where possible the original Sanskrit or Tibetan

word will be placed alongside the English translation when discussing traditional Buddhist concepts and terms.

Description of Abhidharma Content

Abhidharmakosha translates to the "Treasury of Higher Knowledge" and contains the riches of a systematic description of all existent phenomena. This seemingly impossible feat is done by defining 5 overall categories and sub-categories where existent phenomena naturally fall. The first division is between two foundational categories where phenomena must be placed and regard their method of existence, which are either being 1) collectively produced (skt.*anitya*) or 2) not collectively produced (*nitya*). Collectively produced is the synthesis of multiple transitory causes and conditions that come together to form a phenomenon, other descriptors would be an impermanent or changing phenomenon. Not collectively produced is then described as phenomena characterized by a state of being non-caused or non-conditioned, other descriptors would be permanent or unchanging. The vast majority of phenomena are collectively produced and have 4-sub-categories of 1) forms (skt.*rupa*), 2) mind (*citta*), 3) mental functions (*caitta*), and 4) non-associated compositional factors (*viprayuktasamskara*) (Hopkins, 1996). The category of not collectively produced or unchanging phenomena are comprised of states of mental realization and the space objects inhabit, which would be the best example to understand a non-created, permanent, or unchanging phenomena. The scope of this paper will be limited to the first three sub-categories of collectively produced phenomenon: that of forms, mind, and mental factors.

Historical Context, Intent, and Structure of Abhidharma Study

As with many Buddhist doctrines the exact origins of teachings and their interpretations vary depending on the school presenting them. Descriptions of the origins of the Abhidharma range from a miraculous teaching given in a heavenly realm by the historical Buddha Shakyamuni to his deceased mother to a somewhat fabricated teaching after the Buddha's death by academically driven Buddhist scholars of the fourth-century BCE (Nyanaponika, 2010). Theological debates of origin aside, Abhidharma texts represent a major category of Buddha Shakyamuni's teaching known as the "Higher training of wisdom", or sometimes translated as simply as "Metaphysics" or "Wisdom". The major categories of Shakyamuni's teachings are referred to as the Three Baskets (skt.*tripiṭaka*) of morality, concentration, and wisdom. These were formed posthumously by disciples and scholars to better preserve the tradition and teachings (Gelek, 2005). No matter the interpretations from different Buddhist schools, there is a universal and overarching importance in the tradition to trace teachings back to reliable sources, foremost being the historical Buddha Shakyamuni.

The modern lineage of Abhidharma study starts with two commentaries from yogi-scholars of the 4th century; Asanga wrote the "Compendium of the Abhidharma" (skt.*abhidharma-samuccaya*) and his half-brother Vasubandu wrote the "Treasury of Abhidharma" (*abhidharmakosa*). These two commentaries covered Theravadan and Mahayana perspectives, both major Buddhist schools and philosophies of the time in 4th century India and in the modern age. In brief, Theravadan and Mahayana schools differ in their scope of teaching and are classically referred to as "vehicles". In the Buddhist lexicon the term vehicle is to denote that students travel according to the teachings that suit their individual personality and capacity, which in turn set their intended goals of spiritual practice. These two commentaries on Abhidharma are known in the Tibetan lineage as "Upper Abhidharma" (tib.*ngön pa kun du;*

skt.*abhidharma-samuccaya*) and "Lower Abhidharma" (*ngön pa dzö; abhidharmakosa*) to reflect the difference in Mahayana and Theravadan philosophical views, respectively (Gelek, 2005). As with many human endeavors, the conception of "better and worse" often skews the intent of graduated study and practice. So too with the Theravadan and Mahayana schools, which were intended to build on each other, to provide a more thorough understanding rather than compete. Throughout the paper both commentaries and traditions will be referenced in hopes to provide a holistic exploration for clinical application.

As mentioned, the Abhidharma is within the collection of teachings to aid in the training of wisdom by providing a systematic classification and exact descriptions of all phenomenological experience. Abhidharma is less of a dictionary or encyclopedia with a running catalogue of phenomena and more of a periodic table of fundamental processes that enable the student to deepen their own subjective understanding of consciousness and the greater world of phenomena. It is with the intent of personal experience that Abhidharma studies are be undertaken, within the context of the Buddhist spiritual path this would culminate with the ineffable experience of nirvana, when all defilements have been extinguished (skt.*nibbana*) or the individual is "beyond suffering" (tib.*nya ngen lé dé pa*) (Analayo,2006). This state does not spontaneously arise but is carefully cultivated through learning, contemplation, and meditation on the three main categories of teachings and their application to the individual.

Main Mind, Mental Factors, and Psycho-Physiology

The Buddhist definition of mind is deceptively simple as being "clear and knowing". In this view the mind by its own power and nature is capable of knowing and perceiving with a quality of lucidity or clarity. The process of knowing and perceiving is likened to a reflection in a mirror, and also in the aspect where the object reflected happens automatically and

spontaneously. The difference with mind in this metaphor is it is not constrained by physical limits and spatial orientation, instead it is able to "reflect" regardless of location (e.g., thinking of a distant city) and it can extend its reflection to intangible phenomena, such as emotions, concepts, ideas or itself. This essential function is called "main mind" and is then contextualized by various mental faculties that make up the complex experience of consciousness as we know it. A metaphor of a royal court can be helpful to understand the division, with main mind acting as king and the mental factors as his retinue, who perform various duties to keep the court functioning for the service of the realm (Gelek, 2014). Put in another way, there is no true difference within the mind, the king needs his retinue and the retinue their king, instead common functions and context that arise during cognition have been labeled and categorized in Abhidharma teachings to aid in overall understanding and training of the mind.

The list of mental factors or faculties generally identifies 52 discrete functions of how the mind operates in a particular moment, which at its smallest unit has been estimated at 1-2 milliseconds or equated to 1/65th of a finger snap (Gyatso, 2006). Mind can always be divisible and there is no end point to the division or different manner it can be divided. Every author and teacher who talks on the subject of mind make a clear point that these divisions of mind and mental factors are expressly constructed to enable better intellectual and eventual experiential understanding of the mind, to in turn aid greater spiritual goals of nirvana and enlightenment for the service of others. Considering the microscopic quality of the mind, along with its formless nature and constant reflection to internal and external stimuli, the indispensable value of a systematic understanding in the Abhidharma teachings comes into focus.

The intersection of mind and body requires starting with the bases of human experience, in the Buddhist view these are the "Five Skandhas" (skt.*pañcaskandha;*tib.*pungpo nga*). A literal

translation of skandha are “heaps” or “piles” and can encapsulate or categorize the entirety of both phenomena and experience. The five skandhas are: 1) form (skt.*rūpa*), 2) feeling (*vedanā*), 3) perception (*saṃjñā*), 4) mental formations (*saṃskāra*), and 5) consciousness (*vijñāna*). These psycho-physical categories, like many other Abhidharma divisions, are overlapping in experience and serve to provide a foundation to understand more intricate mechanisms between mind and body that make up everyday experience (Jacobs, 2017).

The form skandhas can act as a gateway to build the view of psycho-physiology by traveling down the continuum from gross to subtle physicality that increasingly interfaces with consciousness. At the base of the skandhas of form are the four elements (tib.*jungwa nga*) of earth, fire, water, and air. Rather than being discrete molecular composites, the four elements are described as having general characteristics (e.g., water is wet and flowing; fire is hot and burning; earth is solid and impassable; wind is light and moving). The elements make up physical objects in a combination of percentages that can change depending on circumstance. An example would be blades of grass blowing in the wind: the grass has elements of earth and water, and when the wind blows over it a corresponding amount of wind. During a draught there would be more earth element than water in the grass, due to the introduction of fire (Tsewang, 2007).

From these basic building blocks of physicality come our physical body, specific to our discussion are the sense-organs of the eyes, ears, nose, tongue, and body that interact with sensory stimuli. The sense-organs combine with the next category of the 6-sense doors (skt.*āyatana*), which begin the interface between physical form and the formless quality of mind and consciousness. The 6-sense doors or gateways are another division of main mind, where each sense-door or base has its corresponding sense-consciousness which takes in associated stimuli and interfaces with mind and its mental factors. The location of five

sense-consciousnesses correspond with their physical sense-organ (e.g., eye-consciousness is located within the physical organ of the eye, etc.) and are described as a subtle physical organ in the shape of a small sphere, also called a pure or subtle drop. In this respect to their subtle or pure energetic properties the sense doors are said to be in the nature of light (Gelek, 2014). On the continuum these energetic properties begin more subtle states of existence, presumably beyond cells, neurotransmitters, or genetics, where mind and body intersect.

Psycho-physiology. The 6-sense gateways mark the transition to a subtle energetic, or psychic, physiology that is viewed to be fully integrated into human biology by means of a system of channels, drops, and chakras; collectively known as the subtle body. This subtle physiology is the energy behind the mind and is referred to as "air" (skt.*prana*; tib.*lung*). The psychic air in the subtle body is described by ten categories of five "root energies" and five "branch energies", which are characterized by their primary function. The five root energies are: 1) life holding, 2) equalizing, 3) upwards traveling, 4) downwards traveling, and 5) pervasive. The five branch energies are correlated to the five senses: eye, ear, nose, tongue, and body. These 10-categories of energy serve to keep the body functioning and it is said that should the energy withdraw there would be a resultant physical difficulty. An example of this would be numbness of extremities in diabetic patients: due to the conditions of diabetes and circulation of blood the pervasive energy is either reduced or no longer inhabiting the extremities and thus results in a lack of awareness or numbness (Gelek, 2014). The mind and psychic air are said to travel in tandem, likened to operate as a horse and its rider, where one goes so does the other; where the mind goes so does the psychic air, where the psychic air goes so too the mind. In this manner, refining awareness and concentration will then affect where the psychic air travels along the pathways and architecture of the subtle body's channels and subsequent chakras.

The foundational structures of the subtle body are three main channels: central, left, and right. The central channel is located along the spine and runs from between the eye-brows and terminates at the tip of the sexual-organ. The left and right channels are located on either side of the central channel and run from the respective left and right nostril and terminate at the perineum. Chakras are then 8-points along the central channel where the left and right channels cross-over and are knotted, reminiscent of the medical symbol of a caduceus. At these knotted points the chakras branch out horizontally in a varying amount of complexity to represent their literal translation of the Sanskrit as “wheel”. The eight chakras are divided into five major: 1) crown, 2) throat, 3) heart, 4) navel, 5) sex organ, and three minor: 6) forehead, 7) solar plexus, and 8) center of the sex organ. Each chakra has a set number of branches of smaller channels or tubes called *nadis*, akin to the vascular system of arteries, vessels, and capillaries.

To review, an example from the start would be an arrangement of the four elements that make-up the physical organ of the eyes, the eyes have an associated eye-consciousness, the pure part of the eye-consciousness is a psychic energy drop found within the organ. All together these support an interface with mind and mental factors by the movement of associated psychic airs via the networking of channels and nadis to perceive a visual sensory stimulus and acknowledged the mind and held by relevant mental factors. At this point mental factors engage the object of perception and shapes the experience the individual consciousness has of it.

Mental factors and contextual function. It is important to note the contextual function of individual mental factors in relation to their groupings before listing and discussing them. A single mental factor can be seen to repeat in the overall listing, however its specific function is contextual to its group and other mental factors in a moment of consciousness. Coming from the Theravadan perspective, Nyanaponika Thera offers the metaphor of a single individual

employing his profession in different venues, to better understand the subtle similarities and differences of the same mental factor's function in consciousness. Describing the mental factor as a man employed in a profession Nyanaponika (2010) states:

> Our man's general skill in reckoning corresponds to a single factor (viewed in the abstract) belonging to a certain moment of consciousness. The three practical applications of that skill are the different actual functions of that factor. The various other faculties that our man has to summon to his aid in the three different spheres of his activity correspond to the other members of those groups to which our factor belongs' they signify the internal relations within the same moment of consciousness. The fact that the man is executing his skill in different kinds of environment, and meets there different sorts of people, corresponds to the external relations to other states of consciousness, which may belong to the same or a different classificatory type. (p. 39)

What is taken away from this metaphor is a reinforcement of the overlapping and non-linear function of consciousness in the Buddhist view. An example of contextual function of a mental factor could be the one-pointedness of mind (skt.*cittass'ekaggatā*), whose basic function could take on unique roles depending on the context of application. As such as it could be intentionally developed to aid in meditative absorption (*jhānaṅga*), experienced as fully developed in complete absorption (*appanā*), directed towards liberation as right concentration (*sammā-samādhi*), as an integral support for insight (*upacāra-samādhi*), or serve as mental calm (*samatha*) when paired and equalized with insight (*vipassanā*). Another layer of contextual functioning in mental factors are the karmic quality of the consciousness, being either wholesome and unwholesome states, which naturally interact and are influenced by past and future moments of consciousness (Nyanaponika, 2010). The above would all be examples of

wholesome functioning or karmically beneficial consciousness; that is to say states of consciousness that aid in developing and realizing spiritual goals, as well as giving rise to pleasurable effects on mind and body as a byproduct.

At first cursory glance the list of mental factors and their groupings may seem vague on account of their abstract wording and a habitual view of ascertaining things as self-contained building blocks. Instead, it serves to bring understanding to the purpose of a conceptual framework that aids the reader in their own experience of consciousness and subsequent personal analysis. It is always relevant to be aware that these texts are to support an end goal of experiential understanding, specifically the state of cessation (*nibbana*), and are not intended to be mere scholasticism or intellectual exercise. They are in their own way a treatment plan, complete with goals, psychoeductation, and specific interventions.

Description of the Mental Factors and Groups

The "Enumeration of Phenomena" (skt.*Dhammasaṅgaṇi*) is the root text or section of Abhidharma teachings that presents a list of mental factors. The first paragraph of the Dhammasangani details what is present in a single moment of wholesome consciousness, as mentioned this single moment is estimated to be 1/65th of finger-snap and is the smallest psychic unit (skt.*cittakkhana*) described.

Groupings and themes. The following is a description from the Theravadan presentation and in the context of the consciousness meeting with a physical or mental object in the sensuous sphere of experience (i.e., engaging with the sense-bases, organs, etc.) and accompanied by joy, associated knowledge, and with the quality of being spontaneous in action (i.e., characteristics of a wholesome consciousness). The whole of the description is comprised of 12-groupings of

56-mental factors, which can be extended to include 9-supplementary factors (skt.*yeva-panaka*) for a total of 13-groups and 65-mental factors (See Appendix A). The groups listed are from Nyanaponika Thera's (2010) presentation in *Abhidhamma studies: Buddhist Explorations of consciousness & time* (Nyanaponika, 2010) and are as follows:

> 1) pentad of sense-contact (*phassa-pañcaka*), 2) factors of absorption (*jhānaṅga*), 3) faculties (*indriya*), 4) path factors (*mag-gaṅga*), 5) powers (*bala*), 6) wholesome roots (*kusala-mūla*), 7) wholesome ways of action (*kusala-kammapatha*), 8) the guardians of the world (*lokāpala*), 9) the six pairs (*yugalaka*), 10) the helpers (*upakāraka*), 11) the paired combination (*yuganaddha*), 12) the last dyad (*piṭṭhi-dukā*), and 13) supplementary factors, or "whatsoever other" (*ye-vā-panakā*). (p.32-34)

These groupings form a snapshot of the elements active in beneficial states of consciousness. The beneficial states act to support the mind achieving its specified goal, from a Thervadan perspective this would be the individual accomplishment of cessation (*nibbana*) and from a Mahayana perspective it would be the accomplishment of enlightenment or Buddhahood (skt. *tathā-gata;*tib.*sangye*). Regardless of the goal, these elements may be conducive factors to mental functioning in essence and have the potential to be distilled for cognitive interventions and psychoeducation. Representative of a theme of morality within the mental factors groupings is the eighth group of "the guardians of the world" (*lokāpala*). This grouping is made up of the mental factors of moral shame (*hiri*) and moral dread (*ottappa*), which also have their contextual function in the mental powers (*bala*) grouping. Moral shame and dread are factors that operate in a wholesome consciousness to safeguard it from negative states, much like the evolutionary instincts of how fearing a wild animal keeps you safe. A classical simile of moral shame and dread comes from Buddhaghosa, author of a commentary on the Dhammasangani entitled

Providing the Meaning (skt.*atthasālinī*), likens their respective experience to being offered an iron rod with excrement smeared on one end and the opposite end heated to a glow. Grabbing the end smeared with excrement is akin to the disgust one feels during moral shame and grabbing the red-heat of the opposite end is the sense of moral dread (Bodhi, 2010). The themes of morality in the description of mental factors have definite implications if applied to western culture, and potential for complications, however in terms of cultivating aversion to accurately identified phenomena that are damaging it is most beneficial and could be applied to cognitive-behavioral strategies. Another major theme within the groupings is a sense of mental joy coming from elements of mindfulness and concentration. The groupings of "factors of absorption" (*jhānaṅga*), "the helpers" (*upakāraka*), and "the paired combination" (*yuganaddha*), especially show the relationship between wholeness of attention and a sense of mental pleasure or joy. These themes can be helpful to guide an overall gestalt of how a healthy mind functions in its ability to realize goals. The next section will look at ten vital mental factors for a well-functioning and healthy mind from the Mahayana perspective.

Essential mental factors. The Mahayana presentation of mind and mental factors discussed comes from the Tibetan Gelugpa tradition, specifically a commentary on the upper Abhidharma teachings by Yeshe Gyentsen entitled *A Necklace for the Lucid: A Clarification of the Workings of the Mind and Mental Factors* (Gyentsen & Montenegro, 2010) and an explanation on the commentary by Kyabje Gelek Rimpoche entitled *How the Mind Works* (Gelek, 2014). In this presentation of the mind and mental factors, a division of 52-mental factors, including main mind, are identified in six categories. The six-categories are: 1) omnipresent mental factors (tib. *kun dro nga*), 2) object-ascertaining mental factors (*yul nge pa*), 3) virtuous emotions or mental factors (*ge wa chu chi*), 4) root delusions (*tsa nyun dug*), 5)

secondary delusions (*nye nyon nyi shu*), and 6) changeable mental factors (*shyen gyur shyi*). The following description and discussion will focus on the first two categories of omnipresent and object-ascertaining mental factors, which are primary in the foundation of a healthy functioning mind (Gelek, 2014).

There are five omnipresent mental factors, and as the name implies these are factors of the mind that are present in every moment of main mind to ensure proper functioning. Other translations call them "all-accompanying" mental factors, to highlight the same fact that they will be part of every moment of consciousness regardless of the object engaged or the karmic state. The five omnipresent mental factors are: 1) feeling (tib.*tsor wa*), 2) discrimination (*du shey*), 3) intention (*sem pa*), 4) contact (*reg pa*), and 5) attention (*yee la che pa*).

The mental factor of feeling (*tsor wa*) is divided into either good, bad, or neutral and can apply to both a physically or mentally originated stimuli. The mind is always feeling either one predominately or a combination of good or pleasant, bad or averse, or neutral, which lacks strength of either good or bad and results in a general apathy. The absence of this mental factor of feeling would result in the feeling of numbness or stupor and the lack of natural direction in the individual regarding pursuing pleasant feelings and avoiding negative feelings. Discrimination (*du shey*) is the mental factor responsible for conceptual labeling and knowing, doing so by knowing what something is through what it is not (e.g., the formal logic expression: if A then not B; if not B then A). While this mental factor is always present and active, it is not always correct in its discernment due to misinformation, confusion, or misapprehension. Of particular interest is that the process of an individual's discernment will be difficult to reverse should they go through the logical process with misinformation or in a confused state. The mental factor of intention (*sem pa*) is responsible for directing the main mind to engage with an

object, the lack of this mental factor would result in a lack of motivation in an individual. The sub-categories of intention are based on the character of object the mind is drawn towards, being virtuous, non-virtuous, or unspecified (i.e., neither virtuous or non-virtuous). The mental factor of contact (*reg pa*) denotes the main mind establishing a rapport or relation to the engaged object. This is the mental factor responsible to bring the different sense-organs, bases, and main mind together into an experience for the individual. The lack of this mental factor would make the mind numb or unresponsive, and incapable of feeling (*tsor wa*) since there would be no contact to serve as the basis to feeling pleasant, unpleasant, or neutral feelings about the object. The mental factor of attention (*yee la che pa*) is a more detailed version of intention, in the respect that as intention guides main mind to an object, attention zooms in to acknowledge the details and characteristics within the object. If this mental factor is not functioning, the individual will lack alertness and will not be able to clarify the object but only be left with an impressionistic experience (Gelek, 2014).

The five object-ascertaining mental factors (*yul nges pa*) are: 1) aspiration (*dun pa*), 2) conviction (*mö pa*), 3) remembrance or mindfulness (*dren pa*), 4) concentration (*ting dzin*), and 5) wisdom (*she rab*). The mental factor of aspiration (*dun pa*) seeks that which the mind deems pleasurable, be it material goods, a good reputation, or a positive emotional state. The lack or dysfunction of aspiration in an individual would result in additional problems in motivation, especially the pursuit of long-term goals to contact pleasurably identified phenomenon. The mental factor of conviction (*mö pa*) acts in order to "firmly apprehend" the object of main mind in order to retain it in a concentrative manner (Gyetsen, 2010). The absence of this mental factor in an individual would prevent any meaningful concentration on the engaged object, with the main mind acting similarly to flies momentarily landing on excrement only to circle around it

again to repeat the process. Other interpretations of *mö pa* emphasize an additional layer of appreciation for the object that supports the mind in a firm retention of the object through its qualities of being worthwhile and valuable. The lack of the mental factor of conviction properly functioning within an individual could appear as a lack of boundaries, with the individual being easily swayed and not recalling previous beneficial principles or lessons to adhere to when dealing with others. The mental factor of remembrance or mindfulness (*dren pa*) is different than the popular conceptualization in that it is recalling a previous familiar object and then holding it in the mind. The lack of mindfulness in an individual would simply be the experience of forgetting, that is the lack of any recall of the object. With the experience of partial recollection of the object it would fall under the mental faculty of "seeing but not recognizing" (*nang la ma ngey pa*) and is outside the category of object-ascertaining mental faculties. The mental factor of concentration (ting dzin) is a greater intensity than the colloquial use of concentration and serves to draw the mind further into the object. An additional qualifier of *ting dzin* is that the mind is also labelling or imputing the object of concentration, which puts focus on the mental aspect instead of the psycho-physical aspect of sense-organs and bases of default perception. The lack of concentration in an individual may look like rote understanding and recall, opposed to authentic integration of material or objects. The final object-ascertaining mental factor is wisdom (*she rab*) is simply described as the mind observing and analyzing its object. The emphasis of *she rab* is the analyzation of the object along with an absence of doubt about the analyzation. The lack of wisdom in an individual might appear as naivety or taking phenomena at face value due to lack of proper analyzation (Gelek, 2014).

The Buddhist view grants mind an unlimited potential for development, deeming its nature as pure, clear, and knowing. However, dysfunction can and does afflict the mind in

numerous ways, foremost being the influence of misapprehension through an unbalanced functioning of the omnipresent mental factors and the object ascertaining mental factors, brought about and further influenced by root and secondary delusions (tib.*tsa nyun* dug;*nye nyon nyi shu*), (Nyanponika, 2010).

Exploration of Schizophrenia and Abhidharma Teachings

Principal among clinically diagnosed mental disorders that severely impact functioning is schizophrenia. Known to be crippling to the individual mind and chronic in its course, the term schizophrenia has been used since 1908 while the experience of individuals with severely disorganized and tormented minds has been with humanity for much longer (Piotrowski, 2017). The ancient epic poem *Manimekalai* (Cāttaṉār, 1935) describes what meets cursory criteria of an individual afflicted by psychotic symptoms (Somasundaram, 2016):

> Tatters on his person, his entire body is smeared with white paste of ash/And sandal,/ Talks he with others in a senseless blabber,/He cries, he falls, he blurts, he shouts,/He worships, he bellows, he gets up. He twists, he circles,/He turns, he moves to a corner and lies down, he shouts./And picks up quarrel with his shadow,/And verily behind the mad young man, who is hapless and functionless,/The people stand around and gape at his tragedy. (p.230)

There is a timeless quality in the representation and reaction to a tormented mind, the venue may have changed in the modern age to the digital environment of social media, but the same disorganized behavior can be seen in the form of ceaseless status updates and errant comments. All meeting the same reaction of bewilderment by peers and acquaintances of a person they once knew. It is the intent to first review the current understanding of schizophrenia and then explore

through the lens of Abhidharma teachings and the greater Buddhist path, in order to identify novel interventions that could complement current clinical understanding and practice.

Clinical Review of Schizophrenia Spectrum Disorders

Schizophrenia (SZ) is a spectrum disorder estimated to currently affect 23-million people worldwide (WHO, 2018). The schizophrenia spectrum includes schizophreniform disorder, schizophrenia, schizoaffective disorder, and schizotypal personality disorder. Schizophrenia spectrum and other psychotic disorders are defined by abnormalities in the categories of delusions, hallucinations, disorganized thinking, grossly impaired motor behavior, and negative symptoms. Positive symptoms are effects individuals start to express after onset of schizophrenia spectrum disorders, these include delusions and hallucinations (commonly called psychotic symptoms), disorganized thinking (e.g., loose associations, word salad), and impaired motor behavior (e.g., waxy flexibility, catatonia). Negative symptoms are previous expressions or experiences individuals lose or see a significant decrease in after onset. Negative symptoms are described as *avolition*, ranging from the absence or decrease in motivation to full catatonia; *anhedonia*, a decrease in the amount of pleasure experienced; *alogia*, a significant decrease in speech, and a general diminishment in emotional expression via verbal, physical, or facial cues. Schizophrenia spectrum disorders are usually diagnosed by the presence and rate of occurrence of positive symptoms and negative symptoms as well as the ability to exclude another condition that may explain any psychosis (APA, 2013).

Current Research and Treatment

Current research views schizophrenia to be a neurodevelopmental disorder and it is described as a “multifactorial illness”, where alterations in various genetic elements each add a

moderate degree of risk while interacting with the environmental stressors that trigger onset. Genetic predisposition and environmental stressors are the main causes for developing schizophrenia, in childhood onset schizophrenia (COS) there is a stronger genetic element at play since exposure to environmental stressors has been limited. On a neurological level, repeated psychotic episodes are related to observable changes in neuroanatomy, including reductions in the density of gray matter, reduced cortical thickness, reduced size of hippocampus and amygdala, and an increase in the size of ventricles; all of which have been evidenced through MRI/PET brain scans (Stevens, 2014). Latest research from a longitudinal study of individuals at high-risk of developing psychosis describes an intrinsic trait-like abnormality in brain structure that increases connectivity in a specific neural pathway. This "hyperconnectivity" is significantly correlated with disorganized symptoms and can be consistently detected in patients with schizophrenia (Cao, 2018).

First and foremost in the treatment of schizophrenia is the crucial element of anti-psychotic medications. In a treatment model by Goldstein and Miklowitz (1995) the acute phase of schizophrenia is focused on bringing psychotic symptoms under control, usually in an inpatient setting, and followed by the stabilization phase, and then maintenance phase. Medications such as *risperdal* and *clozapine* have been seen to have remarkable effects in stabilizing patients and reducing their symptoms of active psychosis. The same is true in cases of COS, specifically *clozapine* has been documented to have a strong association with the reduction of positive symptoms of schizophrenia, with 42% of research participants (n=54) showing improvement after 6-weeks of treatment (Sporn & Vermani, 2007). Unfortunately, these medications come with substantial side-effects of cardiovascular problems, weight gain, increased risk stroke, diabetes, Parkinson's disease, and possible development of tardive

dyskinesia, which is jerky and involuntary movements of face and body (Asarnow & Tompson, 2004).

Successful interventions with schizophrenic clients include psychoeducation, individual and family focused counseling, skills training, and rehabilitation/assertive community treatment (ACT) (Asarnow & Tompson, 2004). Within individual counseling, cognitive behavioral therapy (CBT) techniques that foster active collaboration between counselor and client have been proved to be effective. In these interventions the client and counselor first evaluate psychotic symptoms and their related emotions, thoughts, and behaviors to identify common triggers and consequences the client has experienced. After the evaluation of symptoms, the counselor and client can develop strategies and skills to increase coping, improve reality testing, and alter any dysfunctional beliefs and false attributions (Tarrier & Haddock, 2002). Psychoeducation on the importance of medication compliance and relapse rates are important during the maintenance phase, although new brands of injectable anti-psychotics that are effective for 1-month are widely available to aid in the issue of non-compliance. Promoting consistency between home, school, and friends through family counseling and interventions are important and can be further aided through engagement of behavioral health services. Case-management or ACT services can range in their involvement and often help to support family efforts in stabilization and maintenance by coordinating treatment and linkage to resources; adult cases engaged in services were associated with fewer suicides and improved treatment adherence (Simmonds et al, 2001).

In this brief review it is apparent that the frontlines of clinical treatment of schizophrenia is neurologically based, both through tracking physiological changes in the brain structure and mitigating psychotic symptoms through powerful medications. It is perhaps a far-fetched hope, that since the experience of psychotic episodes results in deleterious effects on brain structure the

opposite cultivation of a well-balanced mind and mental factors supported by a realistic view of self could restore functioning.

Conclusion

The intersection of Buddhist view and schizophrenia at the psycho-physiological level is intriguing. Considering the advances in neuroimaging to identify predispositions to psychotic symptoms as well as their resultant damaging effects after onset, a top-down view of the subtle body, the vital mental factors, and their interaction with biological functions could then be monitored and tracked after successful interventions.

It is important to note the cultural beliefs about schizophrenia in the Buddhist view, specifically in the Tibetan and Hindu culture. Schizophrenia is considered an illness; however it is an illness within the structure and worldview of reincarnation and numerous realms or states of existence. All of which are driven by an individual's karma (skt.*kamma*) and are then conditioned by other influencing factors. These conditioned factors are stated to be the person afflicted with schizophrenia is being harmed by spirits (*pretas*), which come in many different forms and generally are opportunistic to the individual's bad luck or poor karma, much like a virus is to a weakened immune system (Zopa, 2015). In a series of responses to letters of concern Lama Zopa Rimpoche (2015) links the illness of schizophrenia, as ultimately all illnesses, to the individual's unique karma and preceding negative actions and emotions that have in turn given rise to the condition of being able to be harmed by spirits. Thus, unwittingly creating the experience of mental anguish and associated psychotic symptoms which must be purified trough ritual or contemplation. His recommendations are wholly from the Buddhist religious/spiritual practice outlook, which takes a comprehensive approach to illness or suffering, but are also

grounded in traditional Tibetan medicine that categorizes certain illnesses in having their cause in environmental causes of a psychic nature.

It is the hope that future opportunities will allow a more thorough analysis of this promising intersection: understanding the mind, repairing a disorganized mind, and the physiology that unites them. Potential topics to explore would be the Buddhist concept of ignorance (tib.*ma rigpa*) as applied to the individual misconception of self and the mystical experiences of spiritual traditions that suggest having been successful in removing this ignorance and achieving a higher state of consciousness (Parnas, 2012). And then contrast these experiences with psychotic experience that embraces an unrealistic view of self, either through the power of confusion or stubbornness (Shonin, 2016).

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Appendix A

Nyanaponika Thera's Presentation of Mental Faculties and Groups (2010)

1. "Pentad of sense-contact" (skt.*phassa-pañcaka*): The first grouping is comprised of five mental factors similar to the 5-skandhas, which are:
    a. sense-contact (skt.*phassa*)
    b. feeling (*vedanā*)
    c. perception (*saññā*)
    d. volition (*cetanā*)
    e. consciousness (*citta*).
2. "Factors of absorption" (*jhānaṅga*) are comprised of:
    a. thought (*vitakka*)
    b. examination (*vicāra*)
    c. rapture (*pīti*)
    d. pleasure (*sukha*)
    e. mental one-pointedness (*cittass'ekaggatā*).
3. "Faculties" (*indriya*) are comprised of:
    a. faith (*saddhindriya*)
    b. energy (*viriyindriya*)
    c. mindfulness (*satindriya*)
    d. concentration (*samādhindriya*)
    e. wisdom (*paññindriya*)
    f. mind (*manindriya*)
    g. joy (*somanassindriya*)

    h. vitality (*jivitindriya*).

4. "Path factors" (*mag-gaṅga*) are qualified by the prefix "right" and comprised of:
    a. view (*sammā-diṭṭhi*)
    b. thought (*sammā-saṅkappa*)
    c. effort (*sammā-vāyāma*)
    d. mindfulness (*sammā-sati*)
    e. concentration (*sammā-samādhi)*
5. "Powers" (*bala*) are comprised of:
    a. Faith (*saddhā-bala*)
    b. Energy (*viriya-bala*)
    c. Mindfulness (*sati-bala*)
    d. Concentration (*samādhi-bala*)
    e. Wisdom (*paññā-bala*)
    f. moral shame (*hiri-bala*)
    g. moral dread (*ottappa-bala*)
6. "Wholesome roots" (*kusala-mūla*) are comprised of:
    a. non-greed (*alobha*)
    b. non-hatred (*adosa*)
    c. non-delusion (*amoha*)
7. "Wholesome ways of action" (*kusala-kammapatha*) are comprised of:
    a. non-covetousness (*anabhijjhā*)
    b. non-ill will (*avyāpāda)*
    c. right view (*sammā-diṭṭhi*)

8. "The guardians of the world" (*lokāpala*) are:
    a. moral shame (*hiri*)
    b. moral dread (*ottappa*)
9. "The six pairs" (*yugalaka*) are factors that support the main consciousness and its mental concomitants and are comprised of:
    a. tranquility of consciousness paired with tranquility of mental concomitants ((*kāya-passaddhi* & *citta-passaddhi*)

       likewise pairings of:
    b. agility (*kaya-lahutā & citta-lahutā*)
    c. pliancy (*kayā-mudutā & citta-mudutā*)
    d. workableness (*kayā-kammaññatā & citta-kammaññatā*)
    e. proficiency (*kayā-pāguññatā & citta-pāguññatā*)
    f. uprightness (*kayā-ujukatā & citta-ujukatā*)
10. "The helpers" (*upakāraka*) are:
    a. mindfulness (*sati*)
    b. mental clarity (*sampajañña*)
11. "The paired combination" (*yuganaddha*) is:
    a. calm (*samatha*)
    b. insight (*vipassanā*)
12. "The last dyad" (*piṭṭhi-dukā*) is:
    a. exertion (paggaha)
    b. undistractedness (*avikkhepa*)

13. "Supplementary factors" (*ye-vā-panakā*) acting as the thirteenth group are comprised of:
    a. intention (*chanda*)
    b. decision (*adhimokkha*)
    c. attention (*manasikāra*)
    d. mental equipoise (*tatramajjhattatā*)
    e. compassion (*karuṇā*)
    f. sympathetic joy (*muditā*)
    g. abstinence from:
        i. wrong bodily-action (*kāyaduccarita-virati*)
        ii. speech (*vaciduccarita-virati*)
        iii. livelihood (*ājivaduccarita-virati*)