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Time Order and ‘Speaking Out’: Traditional Farming and Beliefs in Europe and Indonesia and Sky Symmetry Considerations

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ABSTRACT

Ordering is indicated by what we perceive of the world, like for instance the behavior of water, as water appears always to flow downwards. Since we do not assume that water will flow otherwise when not perceived by us, ordering is assumed to be real. Time order specifically relates to sky movements. Sky movements are widely used to order human practices for farming and religious beliefs. This is usually understood to be caused by a person's one way voluntary practical choice for a stellar guide. However human beliefs and the human body and its possibilities and restrictions do lead to both voluntary and involuntary aspects. I propose a two way correlation by introducing spiritual properties for persons and objects. Spiritual properties ‘speak out’ of integral life and longing. For persons this is a more obvious concept. Art objects, like artistic drawings, make this conceivable for objects too. It is like crying: <au>, as a reaction to pain: quite involuntary and inevitable. Personal is the choice, or maybe one might say: the education, of the expression <au>. Correlation between sky movements and traditional practices for farming and religious beliefs from Indonesia and Neolithic northwestern Europe will be discussed and compared. Entanglement of subsistence practices and sky symmetries forms patterns of mutual influence and determination similar to those in physics. Translational and rotational symmetries of the sky universe turn out to be interwoven with respectively hunter-gatherer practices and farmer practices and their private ornaments worn on their body.

Keywords: Beliefs, body, farming, sky, symmetry, time.

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1.0 Introduction

Once in a time you read a sentence, you see a mountain view and you hear a voice, which are really impressive. Looking at the star sky I notice, just now after the rainy season here at the southern

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hemisphere, that the stars are brighter than ever. An impressive encounter is not the same as any other daily occurrence. It changes you and your life. It is different. You will remember it, and recognize it when it re-occurs.

Mostly it is everyday love, pleasure and devotion that give value to our daily activities. In this way our life as a whole gathers sense and fulfillment. Sometimes we can feel which the most important directions in our life are. There can only be a few like that and they are the basic ones. When one succeeds in considering them one finds that these basic directions are time and again renewed. All the time new impulses are given to them. These impulses are part of everyday life around you, where you live. When you remember an early basic impulse at the moment a new impulse towards the same direction encounters you, this has an emotional impact. In your body these two basic and similar impulses are, as it were, added up. Your body, as a huge reservoir of memories, starts to react, to move, like a cramp, by itself. You 'speak out' and cry: <au>, and this is partly involuntary. With the concept of 'speaking out' I connect with the theatre training work of Iris Warren and Kristin Linklater (McCance, 2011; Nuzzo, 2011). These basic impressions and our cries create order in our personal universe. In this way we human persons together order our human universe. A common time order starts for us when we, as a community, cry and we remember later.

Symmetry considerations play an important role in modern physics to realize that the world of in particular elementary particles is ordered. Symmetries indicate open 'spaces', possibilities, for multiple existences. However in the same way they are assumed to restrict. Existences are constrained to, destined towards, the open spaces only. Outside the open spaces there are assumed to be no possibilities for existence.

Spiritual properties can bridge the gap between objects, such as the sky universe, which is considered to be an object, large scale as it is, and human persons. 'Speaking out' will be understood as the basic notion for spiritual properties, and also for the mutual influence between objects and persons. 'Speaking out' is moment dependent: it occurs at a certain moment in time, and time after time again when interaction occurs. While objects and persons influence each other they are at the same moment constrained by the involved symmetries to specific spaces, specific possibilities. Symmetries for objects can be recognized sometimes directly, the sky universe in particular enjoys for instance approximate translational and rotational symmetry on average. Symmetries for human persons can be recognized within practices and behavior and the body, that together also form the witness of a person's spiritual properties. Symmetries for the body can be easily understood to define and to restrict interaction.

The view that is reflected upon in this article comes somewhat close to occasionalism within early Islamic cosmology (Griffel, 2009). The 11-th century Iraque theologian Al-Ghazali defended occasionalism proper holding that each moment of causality is an occasion of God's will. A natural law is then based on a kind of constant and continual regularity. A thorough discussion of occasionalism-like theologies during the seventeenth century in the Netherlands, at that time a center of religious diversity and freedom of printing, is given in (Parkinson, 2003; Erdmann, 2014). Occasionalism-like understanding has become obscured in western philosophy after the 17-th century; however it revived with the onset of modern quantum physics. The mysticism of the 17-th century Flemish occasionalist theologian Arnold Geulincx influenced playwright Samuel Beckett and sculptor Giacometti, artists from the mid-20-th century (Uhlmann, 2006). Still its early origins in western cosmology have not been studied sufficiently. Also, although some specific artists like Samuel Beckett have been influenced by it, as yet it has not been recognized widely as important for understanding human practices. A recent study (Mathews, 2013) shows Giacometti as the artist of relation. Giacometti turns the question 'what good am I' into the desire to 'reach out'. The notions of free mind and natural law are too wide subjects to be dealt with in this article. I will concentrate on how symmetry concepts and the concept of spiritual properties, for both persons and objects, can be joined without considering them equal, thereby keeping open the possibility of freedom of mind, and this in the context of traditional farming and religious belief practices. My purpose is to find within this case an example of how nature, and natural law, and human expressions can interact.

Indonesian farming and belief traditions reach back in time far enough to be comparable to emerging farming and belief practices in Neolithic Europe. From both Indonesia and Europe I have chosen examples of how correlation happens in reality. After this I will generalize towards spiritual properties as intermediaries at repeated moments to explain how interaction can occur. Introducing symmetry concepts originating from physics will open the path towards a two way interaction and correlation rather than a one way correlation. In the discussion section I will try to find a more intimate body-related explanation for various time orders with different symmetries during the Neolithic as witnessed by the varying personal ornaments of the peoples of that time.

2.0 Farming and sky calendars in Neolithic Europe and in Indonesian traditional communities

Some star constellations appear or disappear at what seems accidently the same time the harvest times re-appear for the farmer. There is no a priori reason why one would follow the stars in the sky looking for a guide for harvest times. When this is practiced, is it just because it is a comfortable guide? To see whether there is more to it examples from Neolithic Europe and Indonesian traditional communities are recapitulated.

One example is the rural village Epe, in the Netherlands. Epe is situated at the border of The Veluwe, a large forest including sand dunes and heath. In and around The Veluwe over 1000 burial mounds can be found. In Epe there are some 150 Neolithic burial mounds. The burial mounds were made from 4000 BC till 800 BC as the last resting place for the prehistoric villagers. After 800 BC people who passed away were cremated and buried in urns that were buried in urn-fields. In that period in Europe one started to experiment with farming alongside with hunting and gathering as means of subsistence (Wittle, 2014). Northwestern Europe was warming up after the last Ice Age (10.000 BC) and at many places one could not be sure of the still rising sea. At around 5000 BC in the Netherlands the Waddensee (Wadden-Sea) emerged as a result of higher sea levels. Farmers did not use the plow and farming was restricted to sand soil regions. Their crops consisted of several kinds of wheat, lentils and legumes (peas). For the preparation of food from wheat one used grinding stones and clay pottery. As a witness to their culture many beads and necklaces made from beads have been found (Devriendt, 2008).

Several of the burial mounds in Epe, forming an alignment, are orientated similarly. Archeological research (Van Baarle, 2009; Bourgeois, 2013) found that the direction of these burial mounds is not accidental. Van Baarle suggests that their direction coincides with the position of the so called harvest moon at the end of September, then appearing just above the horizon at twilight in this region. Bourgeois claims that the alignment forms a repetitive sacred reminder for the memory of the ancestors for the villagers walking or travelling along it. These interpretations do not seem to contradict each other.

Van Baarle compared the burial mounds in Epe with large burial mounds (cairns) in Ireland. In Ireland usually the internal gang or alley leading to an inside burial room was directed to specific positions of the sun. Series of these burial mounds were directed towards sun and moon positions (Cooney, 2000). Starting from this knowledge Van Baarle found that the burial mounds in Epe were orientated towards the September harvest moon, that is, around the time period when they were constructed. Due to precession, directions of sky positions vary with the construction date one assumes. The time span of the late Neolithic is large and radiocarbon dating has a highest temporal resolution of at best 200 years (Bourgeois, 2013).

In northwestern Europe a September full moon is sometimes called harvest moon. The days then at this latitude have equal length as the nights. The sunlight during twilight is already weak and at some specific years a full moon just above the horizon will appear more bright and larger than usual, because at these years the moon is closer to the earth as in other years (NASA, 2015). This moon cycle, including

the major lunar standstill, due to the elliptic shape and declination of the moon's orbit around the earth has a length of 18.6 years. The harvest moon will appear brightly for several evenings on end just after sun set, and significantly increases with its light the number of workable farming harvest hours during these days.

The appearance of the harvest moon at twilight inspired the Neolithic inhabitants of Epe to construct their burial mounds in an alignment orientated towards it, if we follow the suggestion of Van Baarle. The involved September period of the year, at the border of the summer season and the winter season, is farming harvest time, giving name to the related moon type.

From 700 AC the by then Christianized population of Epe already did not know any more about the precise meaning of the burial mounds and many stories and fairytales emerged to explain their existence. During the Middle Ages several of the burial mounds became places where criminals were executed (they are called Galgenberg, meaning Gallow Hill, Rijksmonumenten, Monument nr. 45357).

The coincidence of farming harvest times with sky appearances similar to the one of the harvest moon was widespread. In Indonesia the Pleiades star constellation was and still is used as a marker for harvest times. There, Pleiades is visible (given a raincloud- and mist- free sky) above the horizon during all nights of the rainy season and its disappearance below the horizon at twilight traditionally marks the best rice harvest and new sowing time at the onset of the dry season. The Orion constellation is another often used guide for harvest times. All of these practices have been confirmed by archeological findings and oral delivery. Still now in Indonesia traditional villagers use star sky calendars as a guide for farming (Yogasmata, 2015). The practical correlation of farming harvest times and star sky appearances/observations is firmly documented as existing and workable.

In West-Java, Indonesia, traditional Sundanese communities have a unique traditional way to regard sky appearances as being important for their hour indications and calendar usage (Wiramihardja, 2013). This is based on natural phenomena through what is felt, seen and heard, and in congruence with the effect of the sun's position. For instance they use words to indicate times of the day like 'I will return home when the sun goes down behind the mountain' (indicating 4 pm) or 'I will return home when I can see hardly someone's face' (indicating 6 pm). Note that Java is near the equator and the time for sunset and dawn remains the same during the whole year. This time indication system includes over 20 terms. Apart from this they have their own farming calendar based on astronomical appearances, including Pleiades (Bentang Kereti, the wagon, or Bentang Ranggeuy, panicle stars), Orion (Bentang Wuluku, the pitchfork), the Southern Cross (Bentang Langlayanga, the Kite, or Bentang Saung Genjot, leaning hut) and the Milky Way (catang bobo, which means rotten tree trunk full of holes). This Calendar tradition, Pranatamangsa/Pranotomongso, was recognized by all Javanese farmers during nearly two thousand years. In 1856 it became the officially used calendar for the Surakarta kingdom in Central-Java. Although the climate and the star sky precede differently at this moment, in some villages, like Ciptagelar in West-Java, the Pranatamangsa is still in use. It is not only a farming system; it also refers to religious, moral and social practices. For instance the rice harvested by the villagers from Ciptagelar is not allowed to be sold and is stored in special sacred community cabins. Following Pranatamangsa also, rice farming harvest time should be when Pleiades disappears at twilight, around April, approximately the 8th month Yesta or 9th month Asada in this calendar system (Wiramihardja, 2013), (Van Den Bosch, 1980).

3.0 Transition periods and the souls of the dead within religious beliefs

The practice of coupling the appearance of the harvest moon with farming harvest time in Europe was, like similar practices in Indonesia, embedded in a larger context of a complete year calendar and religious beliefs. The inter-changes of the warm and cold seasons in Europe constitute intermediate transition periods, due to which Europe is called a four season region. It is no accident that the above discussed harvest moon appearance belongs to such a transition period, i.e. autumn. The other, in time of the year opposite, transition period, spring, starts around March. Transition periods in this context

are 'liminal' periods. Liminality was defined to explain rituals of change, rites de passage, and introduced for the first time by Arnold van Gennep ([Van Gennep, 1909](#)) and later re-introduced by Victor Turner ([Turner, 1967](#)). A transition is then depicted as having three phases. The beginning phase is still orientated towards the old shape. The middle phase is confusing, stressful and emotional, and without any shape or orientation. The end phase includes gaining new shape orientation usually under the guidance of a 'master of ceremony'. The middle phase is the liminal phase, the real transition takes place here, and during it persons sometimes start mimetic behavior to compensate the loss of values of the old shape.

In Neolithic northwestern Europe religious beliefs were concerned about the souls of the ancestors and the souls of nature, surrounding everybody everywhere. During transition periods the border between the world of the souls and the world of the living was assumed to be less rigid than usual. The souls of nature combined with the souls of those who already had passed away, as far as they still lingered on earth before reaching a final destination in heaven and still might return back to the living. During the clear developed seasons like midsummer or midwinter which had a powerfully expressed character and strong deities, the souls were supposed to lack the possibility to cross this border. However during the changing of the seasons, and also during dusk and dawn, when the deities were weak, during a transition period, they were able to cross this border. In turn they also could be reached more easily by the living, for instance for asking questions only these souls might know the answer to. The transition periods were a time for ritual offerings to please the souls and for avoiding angering them, the souls ideally were to be 'the good neighbors'. This was supposed to be in analogy with the falling of tree leaves in this period, the trees 'dying' indicating the souls of the dead returned home. In Ireland and elsewhere in Europe there still is a large amount of folklore indicating the importance of the transition periods in the prehistoric past. This is one of the sources from which the religious beliefs from ancient Neolithic people can be recovered (I will not here choose a reference from the many available).

Within the religious calendar I will focus on the transition periods, which are so clearly related to interference with souls. An example of how people experienced the nearness of roaming souls is the practice of using fire and smoke for protection and cleaning during the Gaelic Samhain festival tradition. At the end of the autumn transition period, at the end of October/beginning November, special ceremonies were held that one might compare with later celebrations like Halloween and All Saints/All Souls Day from the Catholic religious calendar. These ceremonies had the form of a cleaning ritual. In Ireland, Scotland and other places still at the beginning of the nineteenth century, there existed the old habit of making a so-called need-fire or force-fire, with friction of wood on wood by using planks or rope and a stake, for the purpose of cleaning. All other, common fires needed to be extinguished. It is not so much the fire, but rather the resulting smoke and charcoal dust and ash that were important here. People would jump over the fire, let the smoke be blown inside the house or blown in the wind over the cattle fields, or they smeared the charcoal and ash on their face. This was needed to become safe and invisible for the still roaming spirits, to discourage these and urge them to leave the living alone and to go to their own world, the 'otherworld'. This habit marked the end of the transition period.

In inland Kalimantan, Indonesia, a similar ritual way to make a fire is used. The Kayan call it Musa: the Musa consists of a piece of soft fibrous wood, underneath which is passed a dry strip of bamboo, which is sawed back and forth until the friction starts a spark. Should all the fires in a house (long-house) go out, or when fire is to be started for the first time in a new house, the Musa is the only method whereby fire is allowed to be kindled. It is used during all ceremonials. For instance during a naming ceremonial, when a newly born baby is given its sacred name, the Musa is used to make it possible to invite the natural souls and the ancestor souls related to the proposed name for the baby to ensure a good future for the child. Practically, its fire and smoke facilitate a safe communication, for instance with so called omen birds. Omen birds are birds that can indicate to the Kayan where and what kind of souls are present in their surroundings. From the omen birds one tries to read whether the given name is good or bad for the future of the child ([Furness, 1899](#)).

4.0 Transition periods and the souls of the dead and farming harvest practices

The transition period was a period with religious activities of the living to please and quiet the roaming souls of the dead, to pay respect to the ancestors and to help the souls to leave the land of the living for their own 'land'. As it turned out, rightly this time of interference with roaming souls also was farming harvest time.

In Europe during spring and summer the crops were sown and growing on the fields. At the end of summer the crops were taken off the fields and processed (whipped) in order to achieve and collect the grains. It was generally believed that for instance wheat was growing from seeds into plants that were fully bearing grains because of 'inspiration' by a 'wheat-spirit' that inhabited the wheat plants. Similar beliefs were and are still wide-spread. In Indonesia it is called the natural rice-spirit, that in later periods evolved into a female goddess with two interwoven sides, one related to growing, abundance and flowering and germinating, Dewi Sri, the other, Nyai Lara Kidul, to death and the souls of the dead, of the ancestors (Brinkgreve, 1997). With the onset of established religions the natural beliefs still lingered on. After being translated into a form that was acceptable for newer more clearly formulated and historical religions the original belief went into disguise but remained practiced.

When grain was processed from wheat ears, it was believed that the wheat-spirit was sacrificed. In some areas an animal sacrifice (or even a human sacrifice) was needed to make this sacrifice of the wheat-spirit tangible and to show solidarity with the wheat-spirit (Samhain festival). Thus harvest time ended with offerings and sacrifices, to support and to 'travel together' with the wheat-spirit, and also a thanksgiving ceremonial, for a generous, abundant harvest. In the same way in Indonesia the natural rice-spirit was supposed to gather from the ritual rice offerings presented to it during harvest ceremonials only the intention, leaving to the villagers the offerings as food for after the ceremonial.

A relation between the wheat-spirit and the roaming souls was easily imagined from these rituals. Indeed the wheat-spirit not only was a crop 'deity', but also naturally a ruler over all souls of the ancestors of the villagers. This is not at all strange since any crop, like one producing a wheat or rice harvest, was a product of the soil, and also the villagers were a 'product' of the soil in their own way, while they consumed the crops and were buried in the soil again after passing away. The souls of the ancestors of the living compared to the soul of the harvested wheat.

Harvest times, announced by star sky appearances, coincided in Europe with the summer-winter transition period and in Indonesia with the transition period from rainy to dry season. Wheat-spirit, or natural rice-spirit, and ancestor souls had ample time to 'gather together' as one group, while at this period the border between the living on one side and both the roaming souls (ancestors) and natural souls (wheat-spirit) on the other side was easy to cross. They became recognized as truly belonging together. This made the entanglement of star sky appearances/observations, farming harvest times and religious beliefs complete.

Examples of this entanglement from Europe are the Neolithic burial-mound alignments and harvest-moon observations in Epe, the Netherlands and other lunar-solar observations at burial monuments in northwestern Europe. An example from Kalimantan, Indonesia, is the Gawai Dayak farming celebration at the end of the transition period from rainy to dry season. Rice farming harvest and planting time in Kalimantan traditionally depends on the appearances of Pleiades (Ammarell, 1985). In this celebration rice harvest and planting, fertility and souls from ancestors and nature all have a role. In shorthand notation this celebration consists of the following parts: harvest rice mortar dance, ritual cloth dance and warrior dance to open the celebration and muster up emotion and expectation, tolak bala dance to ask for protection, totokng dance to welcome the paddy soul, the soul of young rice, the reborn natural rice-spirit, to be planted soon after the celebration, langi yalang dance to thank for health and wealth, and eagle warrior dance where men seek a female partner. The celebration is followed by inviting guests to the long-house, for discussing genealogy and ancestors, to drink to overcome shyness, to

sing, and to tell the future by requesting a special guest to cut a coconut. Finally all families sleep at sacred mats called bidai.

Another example from Indonesia is the Bedhaya Ketawang celebration at Surakarta, Central Java. Every eight years there is at the palace, the kraton of Solo, of the king of Surakarta a private performance of the sacred Bedhaya Ketawang dance, still to this date. Bedhaya ketawang means sky dance. The dance, by nine most often female dancers, is a ritual with each dancer depicting a part of the human body and also one of the stars of the Pleiades constellation. Also the dancers symbolize the nine sacred directions of the mata angin, 'eyes of the wind' which means the nine sacred energy source directions. The dance is associated with fertility, marriage and sexual union just like the above Gawai Dayak celebration (Hughes-Freeland, 2008). Like the movements of the stars the dancers move very slowly. The dance is an invitation to Ratu Kidul, who is an incarnation of goddess Nyai Lara Kidul, one of the twin successors of the natural rice-spirit, to join the celebration. It is believed that Ratu Kidul, who is named queen of the South Sea and also queen of all the natural souls, good or bad, and protector of the souls of the ancestors, after the performance shares the night with the king. In this way the king is confirmed to and commits himself to being the ruler of all the people, including all the ancestors (Jordaan, 1997). At the beginning of his reign the king should set out on an expedition to capture a sacred flower, the Wijaya Kusuma. This flower can only be found on a sacred island off the south coast of Java. Ratu Kidul herself however sees to it that one can only find the flower by meditation. Without the flower the king cannot assume to be accepted as ruler by the Javanese. The flower only appears during the night, rarely and unexpectedly. Those who see it, one believes, can make contact with family members that have passed away by meditating beside it. With the sacred flower ritual Ratu Kidul (Nyai Lara Kidul) demonstrates her relation with her twin Dewi Sri, who is the deity for germinating and flowering, and together with her represents the natural rice spirit.

5.0 Entanglement of star sky and farming practices

Invariably for many ancient people the deep sky and the observed star constellations in it had a meaning in the sense of being a dwelling place for the ancestor souls, their soul's final destination after passing away. Somewhere behind the stars the souls could find peace. Obviously this dwelling place should be far from the world of the living, and behind the stars was an imaginable safe haven for these souls. People in their living environment noticed only the roaming souls, still looking for their final peace. The star sky was imagined by the living to be the best intermediary towards the souls of the ancestors. From this it is only a small step towards a deliberate correlation of farming practices and star sky appearances. Expecting help or approval from the wiser earlier generations, farmers looked upwards towards the sky. Several mythological stories and folklore stories give us examples of such reasoning.

There is a story from Kalimantan, Indonesia, about a 'whirlpool island' with a tree. This whirlpool island away from the Kalimantan coast has a tree and this extra-ordinary tree allows a man called Si Jura to climb up into heaven into the 'land of the Pleiades'. Once in the land of the Pleiades Si Jura finds abundant seeds and fruits and learns how to prepare rice as food and how to farm rice. He marries one of the star deities and stays. After some time, when looking through a hole in the sky down below to earth and recognizing his family, Si Jura weeps. He is allowed to return home bringing with him the sacred knowledge of rice farming on the condition that he holds a feast at every harvest. Till this day the Pleiades stars tell the Dayak people in Kalimantan when to plant and harvest rice (Furness, 1899). Within traditional Dayak belief, which is called Kaharingan, the 'Tree of Life' plays a prominent role. Some branches of it face upwards towards afterlife, some others face downwards to earthly life, that anyway is inseparably connected and balanced with afterlife.

A remarkably similar story is found in Western Europe and is called 'Mother Holle', also known as 'Old Mother Frost': A widow has two daughters, her own daughter and a step-daughter. The step-daughter is asked to do all the heavy work, while the widows own daughter remains spoiled and idle. When the step-daughter wounds her finger with a needle she tries to wash off the blood above a well. Regretfully

she loses her spinning wheel in the well, and she jumps after it to recover it, afraid to be punished. However going downwards she ends up in a garden, where she is asked to help and do good deeds. After this she arrives and stays at the house of Mother Holle, which is in the garden, and for many days makes the beds for her. Mother Holle urges her to shake the beds well in order to make it snow in the girl's world. While she does this, feathers dwindle down on earth in the form of snow. Then the step-daughter becomes home-sick and Mother Holle agrees that it is time for her to return home. At the moment she leaves the gate of Mother Holle's garden she is rewarded generously, because of all her good deeds, and receives back her spinning wheel as well (Grimm & Grimm, 1812).

In the Netherlands, when it is snowing, people still say: Mother Holle (in Dutch: vrouw Holle) is shaking her bed. This seems to be a mythological story about the origin of the craft of making linen from flax. It also is a story about the origin of rain and snow. Through the art of spinning and weaving Mother Holle was believed to be connected with the world of the souls. Children who died early as infant, went to her. Strange is that the step-daughter has to jump downwards into a well to reach Mother Holle's house that is in the end situated above in the sky, just like the Pleiades are above in the sky in the Kalimantan story. Both stories are remarkable too because they do not contain any class- or status-related motifs.

All correlation here seems to originate from the religious beliefs of the villagers. Can there be possible a two way influence coming from both sides, from the star sky, as object, and from the farmer, a person? We now enter the domain of objects and interactions, which belongs to physics.

This is not to claim that the proposed mutual influence is a phenomenon from physics. When we introduce spiritual properties for both persons and objects to describe this interaction we use notions from physics, however extended and with a wider scope.

6.0 Spiritual properties for persons and for objects

Persons are quite different from objects. Usually one understands persons to be spiritual, in contrast to objects. The concept spiritual can lead to discussion and confusion. Sometimes one means with spiritual: purely intangible, without matter, celestial, contrary to material objects. Others mean with spiritual: with a capacity for willing and choosing freely, such as persons are supposed to have and objects not. These meanings already inform us about the differences between persons and objects. I will use the word spiritual, and the notion spiritual property, for both persons and objects, whether hand-made objects or natural objects. Spiritual properties then can bridge the gap between persons and objects.

In (Hollestelle, 2015) discussed are spiritual properties for both persons and objects in more detail. Summarizing there is proposed the following. For a person a spiritual property is the property that describes his/her personal intention and longing and commitment, directly integrated with his/her body and mind. In the above article this description was clarified by discussing the example of physicists who make drawings in notebooks during experimenting. The involved objects then are the investigated object (mostly an object from nature) and the experimental set-up and the notebook drawing.

A spiritual property is possessed by any of these objects only during the time they receive attention from the physicist. During the time the physicist's attention is focused on it, starting with the time of its creation or selection, the object gains a property of congruence and openness to purpose that contains similarity with the physicist's spiritual property. Of course the physicist during the initiation of the experiment bases his/her choices for commitment on existing theories and the before that time known properties of the investigated object. However the physicist is also decisively influenced and constrained by the possibilities and image of his/her own body.

Spiritual properties thus defined can help to form an extension of notions from physics. The emergence of the mass property in physics can be extended towards the emergence of spiritual properties. Where

mass originates from a universal instable field that collapses and becomes part of particles, a spiritual property can originate from a likewise universal object, in this example the sky universe. The sky universe is unstable with regard to its spiritual potential because as an object it can never by itself become in possession of a real spiritual property. As soon as this however becomes possible through an outer event, the spiritual property will emerge like water flows downwards.

7.0 Symmetry notions from physics as path-finders for spiritual properties

Now follows a recapitulation of some basic symmetry notions from physics. After that I will suggest how these can be extended to apply also to spiritual properties as introduced above for both persons and objects.

Noether's theorem is basic to all symmetry discussions in physics and can be formulated as: for all continuous symmetries in the laws of physics, there exist corresponding conservation laws and vice versa (Goldstein, 1980). As an example of how Noether's theorem works out in practice consider translational symmetry in physical space. In physical space the laws of physics should be the same whether 'one moves on a little bit or not'. This is called translational symmetry and according to Noether's theorem it means at the same time that there is a corresponding conservation law. In this particular case that related conservation law is: conservation of momentum.

The importance of symmetry breaking was realized as early as 1894 by Pierre Curie (Curie, 1884): *the asymmetry of effects must be found in their causes, and, asymmetry is what creates a phenomenon. And: the phenomena do not generally exhibit the symmetries of the laws that govern them* (an early visionary towards spontaneous symmetry breaking).

Symmetry breaking presently is often connected to theories about the Higgs field and the emergence of mass. The Higgs field has a vacuum state (lowest energy state) not at zero, but away from zero. At zero the original Higgs field has a rotational symmetric energy like on a hilltop, however when this unstable zero state collapses to the lowest energy vacuum state it loses its symmetry because it ends up in one direction seen from zero (it 'rolls downwards' in one particular direction). One says the symmetry is 'broken'. However all the other directions could have been the final one just as well, and thus the symmetry still lingers on in disguise or is with other words 'hidden' (Brout & Englert, 1998).

The collapse of the original Higgs field and the thereby created stable Higgs field turn out to be interwoven with the components of another field, a vector field, a field that carries a force like the electromagnetic force or the strong and weak forces within the nucleus. The fact that different components of the vector field exist and have a certain mass relates directly to the existence of the components of the Higgs field. When the collapsed and now stable Higgs field interacts with the vector field, excitations of the vacuum (non-zero) state components of the stable Higgs field transfer mass to the particles (excitations) related to the vector field. Visualizing a little bit one sees vector field particles and Higgs field excitations bump into each other and each time they bump the vector particles refresh their mass property. Without these bumps with the Higgs field excitations the vector particles would remain mass-less and would retain the maximal possible velocity, i.e. the velocity of light. The slowing down because of the repeated bumps is interpreted as gaining inertia or, as the emergence of mass. The remaining question is, when a Higgs field component excitation bumps into a vector field component excitation (a boson particle), whether, apart from mass generation for the vector particle, the Higgs field component excitation also is affected. The Higgs field is supposed to permeate the whole universe. The energy for the mass gained by the vector bosons is derived from the Higgs field component excitations as these are 'absorbed' by the vector particles, giving them an extra degree of freedom. From the visualization: the never ending bumping with Higgs field excitations is understood to be equivalent to absorbing a Higgs field excitation. The Higgs field excitation as it were disappears, to become a new property of the vector particle.

One now can construct an extension of the above interaction involving the emergence of mass for vector particles, to understand the emergence of spiritual properties. Just like mass emerges for vector particles from bumps with Higgs field component excitations also spiritual properties can be understood to emerge to an object or a human person by way of ‘bumps’ with a spiritual cause. Crying: <au> repeatedly then is similar to acquiring and maintaining mass. If one wants to complete this extension one has to identify within the cause a symmetry that gives opportunity for a collapse to a state where the symmetry is hidden. This symmetry has to be identified in each particular case newly. In the case of the sky universe and harvest farming practices I suggest identifying this symmetry with the overall rotational symmetry of the sky itself, of the sky universe. In every direction and at any time the sky universe is assumed to be the same approximately, discarding the details. At every new moment in time the sky universe may possibly take on a certain detailed shape, of which an appearance maybe or maybe not is ‘absorbed’ by an observation. Just like a physicist planning an experiment gives attention to the object he/she is investigating, for a farmer one of the investigated objects is the sky universe. The spiritual property emerging to the farmer, manifested by the cry: <au> depends on the detailed shape of the sky universe and sky appearance, and the personal history and body of the farmer. This sky appearance is ‘integrated’ into the practices of the farmer and gives his/her feelings ‘weight’. Repeated similar appearances follow from the relative motion of sky universe and earth and cause the spiritual property to be a conserved property.

The sky universe is everywhere. Every detailed shape of it, wherever that shape may be, contains a lingering energy, a potential spiritual property that can be discovered in its appearances. As an object the sky universe’s potential spiritual properties are as many as its details, its shapes. These shapes cannot make observations by themselves. This is the unstable situation that resembles the original unstable Higgs field. Only when observed by a person (a shape of) the sky universe acquires a real spiritual property. When the person’s attention moves elsewhere, the shape loses its spiritual property again, only to regain it when regaining attention. The potential spiritual energy lingering in an object has to agree with a person’s practices otherwise it will not possibly become an appearance causing the expression/cry: <au> that is at the center of the person’s spirituality. For a farmer’s practices to be continuous and lasting, the attention towards the sky universe shape has to be continuous and lasting too. This is the stable sky universe situation. The symmetry seems to be lost by the particular observation, however lingers on because of the arbitrariness of the moment and direction of observation that just depend on a particular farmer’s situation. One notices that, just as Higgs field components are necessarily interwoven with vector field components, object (potential) spiritual energy and personal practices are interwoven from the start. There is inevitability to this fabric that indicates that cause and effect form one whole. It seems that a deliberate personal choice for a certain sky appearance to be integrated into the person’s practices is more difficult to realize as one may think starting from the idea of spirituality as freedom of choice.

On the other hand a sky universe shape, when corresponding with a certain appearance towards a person leading to observations integrated into practices, has a ‘destination’ towards these personal practices. This is how all objects and practices are entangled just like practices between themselves are entangled. There we find the two way influence between persons and sky universe: when practices and sky shapes are restricted to each other they define each other. Indeed water flows downwards. The culture of making water vessels depends on this. From this culture however in reverse one can determine the decisive property of flowing downwards of water. The personal culture of making water vessels and the object water define each other and they have interwoven properties. It is the properties, not so much the existence that counts here. When water vessels like these exist, water like this will exist; when water like this exists water vessels like these will exist.

In our example of the community of farmers/villagers of Epe from the European Neolithic the appearances of the harvest moon at twilight seem to have made an impression, causing each time the expression/crying: <au>. It is the number one sky appearance that agrees, correlates, at the right time with religious practices and farming practices. From now on for the farmers the harvest moon appearances order their time. Without the continuously repeated harvest moon

appearances/observations the farmers/villagers would miss the necessary spiritual weight, so to speak, to keep up their practices and culture, and these would go lost in time. However also for the sky universe there is in turn time ordering by the farmers' observations and practices. The sky universe shape that rests behind the harvest moon appearance has a destination come true. Its unique potential spiritual property can only transform into a real spiritual property by becoming part of a certain unique practice.

8.0 Discussion: Another formulation, personal ornaments and sky symmetries

Above it is argued that farming practices and religious practices and the sky universe, in the past and now, are closely interwoven. The belief patterns described here with examples from Indonesia and north-western Neolithic Europe seem in many respects similar. It is however not easy to extrapolate towards patterns of social behavior in general. Not only sky observations and the need for subsistence and the encounter with nature are involved, also the interactions between human persons and the detailed individual personal life of all the people that form a social unity. For instance personal love and tenderness, ability to co-operate, willingness to confess etc. will all interfere with and make up personal life. 'Speaking out' gains a complexity with many directions. The concept of spiritual properties as temporary and momentary not necessarily leaves related patterns strict and fixed, it provides opportunity to show the origins of flow and change. Below I will discuss how a change in subsistence can be related to changing individual intimate behavior: farming practices and sky observations both are described as activities of the body, corresponding with the use of certain personal ornaments as private decoration of the body.

When there is a cultural environment like sketched here it is natural to expect that personal human ornaments, as cultural expressive objects, are witness of the cultural change at the time when farming emerged as subsistence practice. And indeed there is evidence that the peoples who around 5000 BC in Europe started with farming practices used ornaments that are different from ornaments used by those in the same region and time who remained hunter-gatherers (Solange, d'Errico & Vanhaeren, 2015). The latter people's ornaments consisted mainly of necklaces with animal teeth and punctured shells. The farmer's ornaments were generally more realistic, like human figurines (bodies) or human heads (parts of bodies), or consisted of punctured carved stone beads (mostly the material is carved amber). Is there a clue to recognize the respective star sky appearances/observation practices from the ornaments used? The hunter's ornaments were objects telling of successful hunting in the past and predicting successful hunting in the future. They are telling of the habit of observing, looking, horizontally far away in space, for instance towards possible prey. The importance of landscape for these peoples is described in (Cannon, 2011). Generalizing strongly one might interpret this, following the horizontal direction in space and time, as moving continuously, unhindered and free from gravity. Important is the translational symmetry of the sky universe, divided in similar parts by the preceding movements of the sun and moon relative to earth, like with a measuring rod. This formulation agrees with new research about sky reckoning in the Mesolithic (Gaffney et al, 2013). At Warren Field excavation in Scotland it was found that from 8000 BC till 4000 BC a series of pits was in use that could help the ancient hunter-gatherer people there to predict the coming of new seasons with a lunar-solar calendar. It is striking that at Warren Field the series of positions of the pits itself follows the path of a similar moon phase along a continuing earthly horizontal line, correcting for the yearly shift in moon path with the help of the appearance of the sun during winter solstice at this same earthly horizontal line.

The Neolithic farmer's ornaments on the other hand included realistic figurines and were telling of what their owners used to attend to for many moments of their life: looking close by, following their body upwards, to the rain clouds or sunshine, and downwards, to the soil and crop. This nearby bodily vertical direction might be interpreted as moving along with and against gravity. Where continuing horizontal movement has no boundaries and is like being free, repetitive vertical movement has boundaries; it is like breathing and dancing. Here one sees the direct relation with repetitive sky appearances not only at the horizon but in the whole sky including straight above. Now important is

the overall rotational symmetry of the sky universe. Repetitive sky appearances/observations correlate with the spiritual weight gained by time and again crying: <au> as witnessed by the ornaments these farmers were wearing: when searching for a way to express verticality the human body, and especially the head as its vertical culmination, seems a natural choice. Interestingly remaining artistic monumental carvings in large stones that are part of Neolithic mounds from approximately 3000 BC at for instance Loughcrew and Newgrange in Ireland can be described as based on real life influences, rather than being abstract and elusive (Doyle, 2015).

Recent examples of this correlation between verticality and farming can still be found in Indonesia. For instance Dayak farmers, in Kalimantan Indonesia, use the appearances of stars like Pleiades straight above their head because in the forest they are not able to notice star appearances at the horizon. Some Dayak people use the following technique depending on the stars to determine the right time for planting (which is just similar to determining the right time for harvest): They nightly pour water into the end of a vertical piece of bamboo on which a line had been inscribed at a certain distance (unrecorded) from the open end. The bamboo pole is then tilted until it points towards a certain star (unrecorded) at a certain time of night (also unrecorded), causing some of the water to pour out. It then is made vertical again and the level of the remaining water noted. When the level coincides with the mark, it is time to plant (Ammarell, 1985). Traditional Sundanese farmers, in West-Java Indonesia, look upwards at a certain hour of the night, following their raised arm in the direction of Orion, to notice when rice grains collected on their opened hand would slide downwards as an indication for rice harvest time (Ammarell, 1985). By looking upwards and downwards the farmer is taking efforts and is able, so to speak, to look at the earth from a distance, and see it as a whole revolve with always repeating seasons and returning star constellations. In contrast the hunter-gatherers by looking horizontally remained free to follow the earth's surface; they moved along it, changing position to take advantage of their knowledge of the coming seasons and seasonal prey. The involved symmetry for them is the overall translational symmetry of the star universe. Of course then for the hunter-gatherers crying: <au> was an expression different from crying: <au> for the farmers.

In Neolithic Europe the way to bury those who had passed away mostly included burial mounds. The remains of the deceased stayed under the soil of the mound, accompanied by pottery, stone tools and ornaments that might be helpful for the soul's journey to the afterlife. For the soul of the departed the easiest way to reach the afterlife was assumed to be through the soil. In Indonesia a likewise use of burial mounds is unknown. There one of the traditions is to temporarily use wooden coffins, placed on wooden poles or high up in bambu huts (Kalimantan). This difference may partly be due to climate. When the time is there, that is when the living assume that the soul of the departed is by now purified which depends also on offerings, the material remains are collected and placed for instance under a large tree (eastern Java). The now freed soul can finish its journey towards heaven.

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