

*Full Length Research Paper*

# Ecological stress and deritualization in East Asia: Ritual practices during dark age phases

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**Despite highlighting the implications of resource over utilization and scarcity on social systems, recent studies under explore the impact of environmental stress on culture. Specifically, further research is needed to understand the importance of natural resources for ritual practices. This study utilizes structural ritualization theory to analyze historical periods characterized by ecological degradation and deritualization. The period examined corresponds to the former and latter Han Dynasties, a moment in time that saw the first universal history of China written and where discussion of ritual appears prominently in historical documents. In addition to primary texts, secondary sources are used to examine deritualization and the continuity, abandonment, and emergence of new ritual practices. The results demonstrate that despite periods of resource unavailability social rituals survive. By tracing the introduction of Chinese ceramics and burial practices into the Korean peninsula and Japan, we see the strategies human communities employ when they can no longer obtain needed materials to practice specific rituals.**

**Key words:** Structural ritualization, environment, dark ages, ritual.

## INTRODUCTION

Over world history, the interconnections between society and nature are apparent in a myriad of processes that extend well beyond economic activities to include the cultural and ritual practices of groups. Since time immemorial, culture has guided human interactions while nature has allowed human communities to produce tangible objects important to cultural life. In early societies, the physical objects necessary for cultural practices have been directly linked to surrounding physical environments. For this reason, environmental degradation has the potential of disrupting the cultural life of groups when previously used materials are difficult to procure, become scarce, or are no longer available. As previous studies have noted (Chew, 1999, 2001 and 2007), environmental and social disruptions can facilitate social change. Changing material circumstances can compel human communities to abandon, transform, or create new cultural practices. The abandonment of specific cultural practices can in turn

lead to the emergence of new practices, for example, rituals that may signal a community's changing relationship with the environment.

Among the various rituals engaged in by social actors, human communities have since ancient times practiced rituals linked to the life cycle. As in other parts of the world, in East Asia such ritual practices came to include a variety of transitional rites; for example rites of birth and burial rituals. Regarding the latter, clearly evident in tomb sites throughout East Asia is the fore thought and meticulous display that characterized funerary rites. For example, the funeral rituals of the societal elite were complex and well organized in ancient China (Rawski, 1998). As made clear in the excavation of tomb sites in East Asia, burials and their observance were central to social life and served a variety of purposes such as the "disposal of the physical body, public recognition that a life has been lived, paying tribute to the deceased, facilitating the expression of grief and providing support to the bereaved, a rite of passage for both the deceased and the bereaved from one status to another, assisting the deceased in afterlife activities, providing an opportunity to reestablish contact with friends and relatives, and re-affirming or

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rearranging the surviving social group that may have been disrupted by the death of the deceased" (Rawski, 1998; Ch'ien, 1994 and 2002).

Funerary rites and customs in ancient East Asia also contributed to the development of the arts while encouraging improvements in production processes (Rawski, 1998). For example, the development of the ceramics industry in ancient China, Japan and Korea, benefited from the observance of burial rituals. Tombs and their furnishings served as reminders of the lives, activities, and accomplishments of individuals. Additionally, designing and creating tombs made collaborative action possible that supported and re-affirmed beliefs about the connection between the world of the living and the after-life (Rawski, 1998).

Reflecting our interests in the connections between ritual life, social disruptions and nature, the focus of our research is four-fold: First, of primary importance to this study is the degree to which ritualized practices are altered as a result of changing material circumstances. Second, are ritual practices abandoned as a result of ecological or social disruptions? Third, if people attempt to fill the void created by the abandonment of certain practices, do new ritual practices emerge? Finally, we are interested in the continuity or discontinuity of ritualized practices before, during and after disruptions. To study these issues in an in depth manner we focus on one type of ritual practice; East Asian tomb rituals from the 3<sup>rd</sup> century B.C. until the 10<sup>th</sup> century A.D. For the sake of clarity, we specifically analyze a period in time we designate as a dark age or a large scale social disruption. Consequently, our study examines three historical periods that coincide with the dating of an East Asian Dark Age: a period before the onset of an East Asian dark age (202 B.C. – A.D. 220), a Dark Age (220 – 618 A.D) and a post-Dark Age period (618 – 907 A.D). This approach will allow for a detailed exploration of ecological relations and their impact on regional social practices, while also giving coverage to cultural change, and in particular the transformation, abandonment, or emergence of new ritual practices.

### **Structural ritualization theory**

To examine these issues this study employs structural ritualization theory (Knottnerus 1997). This perspective builds upon the works of various scholars such as Durkheim (1965), Goffman (1967), Collins (2004), Turner (1967) and Douglas (1970) and is especially concerned with how social rituals are maintained, diffused and transformed in society. More precisely, the theory focuses on the role ritualization plays in daily social life and the processes whereby rituals emerge, organize social relations, and may be altered. The theory assumes that ritual practices are a fundamental aspect of human behavior. According to this perspective, rituals are socially standardized and repetitive symbolic activities which may involve religious or sacred behaviors. However, the theory

utilizes a much broader conceptualization of ritual which recognizes the importance of customary secular activities within human communities. Rituals are characterized as regularized social practices that take place in both secular and religious social environments. Indeed, it is assumed that standardized or ritualized behaviors are an integral feature of everyday social interaction.

In its original formulation the theory focuses on structural reproduction by emphasizing the importance of embedded groups or groups that are nested within a more encompassing collectivity such as an informal youth group in a school or a problem solving group in a bureaucratic organization. The formulation focuses on the ritualized actions performed in a wider social environment that acquire significance for the actor and then become part of the individual's script for his or her immediate world. In this way, although practices are not just "copied," they surface and are expressed in ways that may confirm the pattern of behavior in the wider social environment.

A number of concepts allow for an examination of this particular issue and more generally ritual dynamics that operate in various kinds of groups. Briefly stated, ritualized symbolic practices (RSPs) help organize group dynamics. RSPs are standardized, schema-driven actions. Schema refers to a cognitive framework. RSPs, therefore, involve regularly engaged in actions that possess meaning and express symbolic themes. They contribute to the patterning of everyday behavior and interaction in various social environments. Such practices are found throughout social life and can include ritualized forms of interaction within different institutions, subcultures, and groups of varying size (e.g., burial practices peculiar to a country, patterns of activity and communication in a youth group, religious practices within a society, family celebrations, ritualized sporting events, dining practices, etc.). This approach emphasizes that much of the taken for granted daily lives of people rest upon ritualized activities grounded in cognitive schemas.

Four factors play a part in ritualization processes affecting their overall rank or strength. The four factors that influence RSPs are salience, repetitiveness, homologousness, and resources. Salience involves the "degree to which a RSP is perceived to be central to an act, action sequence, or bundle of interrelated acts" (Knottnerus, 1997). This involves the conspicuousness or prominence of a RSP, which too can vary. Repetitiveness involves the "relative frequency with which a RSP is performed". The repetition of RSPs can vary. For instance, in a social setting, the presence of a RSP might be rare. In other social contexts, actors may engage in the ritualized behavior repeatedly. Homologousness implies a "degree of perceived similarity among different RSPs" (Knottnerus, 1997 p. 263). It is possible that different RSPs exist in a social milieu and these practices may exhibit a similarity in meaning and form. The greater the correspondence between them, the more likely they reinforce each other. This enhances the impact of RSPs on actors in that setting. Finally, and quite importantly, resources are "materials needed to engage in

RSPs which are available to actors” (Knottnerus, 1997). The greater the availability of resources, the more likely an actor will engage in a ritualized practice. Resources include nonhuman materials such as raw materials, physical props, technology, utensils, artwork or ornamentation, buildings or physical structures, money, and time. They also include human traits like interaction skills, physical dexterity or strength, and intellectual ability.

Rank involves “the relative standing of a RSP in terms of its dominance” or importance (Knottnerus, 1997 p. 266). According to the theory, rank is a function of repetitiveness, salience, homologousness, and resources. A RSP ranks high if it is repeated often, is quite visible, is similar to other practices, and actors have resources to take part in it. Overall, the higher the rank of the RSP, the greater its impact on the thought and behavior of people, the social relation that form between them, and the structure of a group.

In focusing upon rituals operating in different social environments the theory utilizes the concept of “domain of interaction.” A “domain of interaction” is originally defined as a “bounded social arena that contains two or more actors, who are at least part of the time engage in face-to-face interaction” (Knottnerus, 1997). Such a “delimited sphere or region of social activity” has the power to produce effects or the probability of occurrences involving actors’ cognitions and behaviors. In the present study we expand upon this concept and introduce the concept of “social domain” which refers to a “bounded social arena that contains two or more actors two or more actors who may be engaged in face-to-face interaction.” A social domain still produces effects and involves a delimited sphere of social activity but does not necessarily require all actors to have had some face-to-face interaction. With this alteration it is possible to apply the arguments of the theory about ritual dynamics to social arenas or domains at various structural levels. A social domain can refer to larger social environments (where direct interaction between all actors may not occur), e.g., an organization, community, society, or several societies within a geographic area. The theory can, therefore, be utilized at a regional or global level of analysis, to explore the ritual dynamics operating within these larger social arenas along with possible linkages between macro level phenomena and more micro level occurrences (a multilevel model of social structure for analyzing ritual dynamics from the macro, global level to the micro, interactional level is outlined in Knottnerus (1997) and more fully discussed in Knottnerus forthcoming (Knottnerus and Prendergast, 1994).

Especially important to the present study is another concept from the theory: deritualization. Deritualization involves the breakdown of previously engaged in ritualized symbolic practices for individuals and groups.

Such a situation results from disruptive events and conditions that are occurrences in social life that interrupt or disturb the ritualized activities that people normally

engage in. Disruptions, regardless of their type or origins, can impact ritualized practices creating a situation where individuals, groups, and entire societies are deprived of those rituals which normally provide meaning, direction, and stability in actors’ daily lives (for an investigation of such an occurrence at the micro level involving internment in concentration camps (Knottnerus, 2002).

Various developments can result in disruptions and deritualization. For instance, previous research has shown how internment in a highly coercive environment, that is, concentration camps, forced displacement of youth from urban areas to the countryside (during China’s Cultural Revolution), and disasters such as tornadoes or hurricanes are disruptive events that can interrupt people’s ritual enactments. In the present study, we turn our attention for the first time to the possibility that the lack (that is, elimination or reduction) of resources employed in ritual practices can also disrupt such practices. As previously discussed resources are one of the factors vital to the production of ritual practices. All ritualized activities require the use of specific materials; human and nonhuman – for their successful enactment. If, for whatever reason, the eradication or diminution of these types of resources occurs such a condition can act as a disruptive event resulting in the breakdown of previously engaged in ritualized symbolic practices.

For these reasons we suggest that periods of ecological stress or Dark Ages can be conceptualized as disruptive events, that is, disruptive periods in time, when certain nonhuman material resources become scarce or unavailable, and therefore interrupt ritual practices occurring in social domains at the macro, global level (e.g., entire societies and even regions of the world). Dark Age periods that include ecological degradation, economic downturns, deurbanization, and population losses can directly impact the cultural life of human communities. Indeed, disruptions such as these can have profound implications for social systems resulting in the dissolution or collapse of rituals of varying types and strength.

Finally, the theory argues that the reconstitution of rituals enables actors and groups to adapt to and cope with disruptions and deritualization. While not in any way inevitable, when conditions allow for it e.g., different resources are present – we would expect societies and groups to attempt to create new or altered ritualized symbolic practices to cope with disruptive situations. By doing so actors and groups regains a meaningful focus, coherence of action and stability in their social relation and arrangements. In this investigation we seek to determine whether this is the case and if so in what way this occurs. In other words, when societies and regional systems experience a dark age are available resources utilized to reconstruct ritual practices?

Recognizing the importance of both symbolic and material elements, our research bridges a gap between structural ritualization theory and the materialism of historically oriented Marxist perspectives, such as world system

theory, by drawing on Pierre Bourdieu's (1984) theory on habitus and field (Bergesen, 1990, 1991, 1992). According to Bourdieu (1977, 1984 and 1989), there is a dialectical relationship between structure and agency, objectivity and subjectivity, that comes to influence the actions of individual actors within communities. Internalized or cognitive structures surface in the expressed behavior of individuals whose actions, in the context of this research; signal a current or changing relationship with the natural world. Further drawing on Bourdieu (1984) we find that a dialectical relationship is also present as we make sense of the desirability of certain cultural objects for a community.

### **CHINESE HISTORIOGRAPHY AND THE ARCHEOLOGICAL RECORD**

Historical accounts of China can be found in a number of annals that have been compiled by Chinese historians and court scribes as early as the Former Han dynasty in the 2<sup>nd</sup> Century B.C. (Dubs, 1955; Wilkinson, 2000). According to Beasley and Pulleybank (1961), the "first chronicles (or histories were developed) out of the records of diviners and ritualists." It is then of no surprise that contained within various annals are mentioned not only the political and economic life of the time, but references and descriptions of various cultural and ritual practices. In historical works that cover the period under investigation, such as the *Shiji* and *Hanshu*, one discovers wide geographic coverage (Gu and Zhao, 1938; Gu, 1974; Watson, 1974; Qian, 1961 and 1993).

Additionally, the works that comprise the Dynastic Histories which cover the period under examination are vast. Of the 25 Dynastic Histories 17 give coverage to the historical period examined in this study. Furthermore, the attention devoted to the subject of rituals in the Dynastic or Standard Histories is considerable. The salience of ritual to Chinese life is made clear when historical documents dedicated to China's Imperial Age significantly cover the subject. In fact, at least 18 of the 25 Dynastic Histories contain a chapter where ritual is addressed.

Along with historical interpretations, archaeological assessments can also inform the analysis of trade and cultural exchanges between groups (Laufer, 1962; Paine and Soper, 1975; Silver, 1985; Kohl, 1978, 1989; Woolf, 1990; Sherratt and Sherratt, 1991; Kristiansen, 1998). Archeological research points to economic and cultural interconnections within the region as indicated, for instance, by the discovery of Chinese ceramics dated to the period before the Later Han or Eastern Han dynasty (25 – 202 A.D.) in both the Korean peninsula and Japan (Paine and Soper, 1975; Laufer, 1962).

### **ANALYSIS OF THE DATA**

This study draws from the archeological record and textual sources to build a picture of the past during three

periods: a pre-Dark Age, Dark Age and post-Dark Age. We find that ritual in the Dynastic Histories is a subject of much interest because the "Chinese considered the proper observance of ritual and, in its more mundane form, social etiquette to be the very hallmark of a civilized people" (Wechsler, 1985). Furthermore, we find that significant attention is given to funerary rites. Having outlined our theoretical framework and methodological approach, in the following section we examine the importance of nature for ritualized symbolic practices prior to, during, and after and East Asian Dark Age by giving primary attention to funerary or tomb rituals. However, what follows, also gives coverage to the importance of other rituals, trade, and cultural exchanges to make much larger observations and inferences about consumptive patterns in the region and for the period under study. Beyond a discussion on funerary rituals, we seek to understand the implications of consumption for human communities.

### **Cultural, nature and rituals: The pre-dark age period**

The Chinese Han period is recognized by historians as an important historical epoch (Eberhard, 1960). Not only is spread of the Chinese "tributary system" linked to this period, but cultural exchanges between human communities in East Asia intensify. In a period characterized by cultural and economic growth, as well as abundance, we find that a number of rituals including rites of passage, marriage rites, festivals, purification ceremonies, civil ceremonies, rituals of exchange, and burial rites depended on and were shaped by the material resources of the time.

An examination of first-hand accounts recorded by royal scribes in *The Grand Scribe's Records* shows the impact periods of excess consumption can have on ritual practices and nature. For example, in 104 B.C., after the Po-liang palace caught on fire and was destroyed, the Han emperor ordered a new palace built. The original palace was located in the Han capital of Changan and was considered a true monument to the glory of the Han dynasty. A royal scribe records a description of a beautiful building only fit for royalty, and adds that later generations will not have such a magnificent building (Qian, 1993; Ch'ien, 2002). In order to build this extraordinary palace hundreds of cypress trees were cut from local forests. The abundance of resources during the pre-Dark Age period allowed people of the time to follow customs linked to resource availability.

Cultural customs that called for practices that exhausted and used raw materials on mass were tied to abundance. This is exactly the case when the emperor orders a new palace built in accordance with local customs. The custom is that in the event a structure, such as a house, is consumed by a fire it should be rebuilt larger than the original (Ch'ien, 2002). The logic being that a larger structure subdues the evil in the area that destroyed Po-liang. In accordance with this custom the Chien-chang Kung or

Established Emblems Palace was built on such a grand scale that it dwarfed the original building it replaced (Qian, 1993; Ch'ien, 2002). During times of abundance one finds that conservation is seldom a concern, and as Chinese documents of the time reveal, custom and ritual in the pre-Dark Age was facilitated by the availability of material resources. To further understand the importance of ritual and interconnections that exist between the practice of ritualized practices, economic activities, and environmental degradation, attention can be given to funerary rites in East Asia.

Historically, ritual life in East Asia is strongly linked to the observances that mark lifecycle or transition rites, the worship of Heaven and the earth, and the spirits of the dead. Ancient people in the region as far back as the second millennium B.C. were performing and recording ritualized symbolic practices and in particular funerary rites (Keightley, 1978; Ching and Guisso, 1991). Since ancient peoples in East Asia believed that their happiness and prosperity depended greatly upon maintaining the right relationship with the spirits of the dead, they were specifically interested in the forms of behavior that would cultivate a good relationship with those in the afterlife. Relations between the living and the dead were then perceived to be dependent upon proper forms of worship. The emphasis on order that characterized a variety of secular activities during the pre-Dark Age also extended to beliefs about relations with the dead. Maintaining connections to the deceased has historically meant the performance of various rites. Through mourning, sacrifice, and offerings individuals both honored the dead and aided their transition into the afterlife. The link between the world of the living and the afterlife is apparent not only in the description of funerary rites that survive in historical manuscripts, but in the objects that are part of the archeological record.

During the Han dynasty burial rituals became increasingly complex and hierarchical. Burial mounds formed the shape of hills, a reference to the belief that the dead made their homes on mountains. Symbolism was also more defined with the "five elements" playing an increasingly important role in funerary rites (Bol, 1992). The five elements comprised of the four principal directions, east, west, north, and south, with the earth, as the fifth element, at the core representing stability. The importance of these components is depicted in various uncovered tomb sites, and made evident in the many wares found by archeologists. It was the custom to place figures that resembled and symbolized these elements in tombs as well as placing clay replicas of material possessions, animals, and people.

In order to reproduce material culture the natural landscape comes under assault as human communities extract what is needed from the land in order to meet the social, economic, and cultural demands of the time. In the case of Chinese funerary rites, pottery kilns become important. The manufacturing of pottery required clay,

glaze, fuel, and raw materials such as siliceous rock and wood (Wilson 1995). Along with agricultural cultivation and urbanization needs, we find that the manufacturing of items such as pottery increases during this period. When coupled with other economic and cultural activities, the resources required producing, store, and ship these wares had a heightened impact on the environment.

Archaeological evidence shows that from the time of the Chinese Han dynasty, through the Six Dynasties and during the Tang period tomb furniture comprised of figures, models and vases was widely produced and quite sophisticated (Medley, 1976). In comparing decorative and utilitarian pieces during the Han Dynastic period, pottery is far more elaborate and extravagant than in earlier periods. According to Medley (1976) this extravagance is tied to a "spendthrift attitude to the social customs of the period; (ostentatiousness) even in death was not only acceptable, but it was meritorious". Economic growth during this period meant more elaborate tombs, especially in the south where brick decorations depict the affluence of the times. As an element of funerary rites, use of replicas replaced human sacrifice and the burial of actual goods in earlier periods. The duplication of various aspects of daily life, people, food, servants, weapons, and tools relied on the skills of artisans who produced figurines using clay and wood. Additionally, given that this practice was widespread, an industry geared toward the mass production of tomb-figures was also in place. Excavation of tomb sites in East Asia reveal that both crudely made pieces and sophisticated figures can be traced to the Han dynastic period (Honey, 1945). One can argue that mere copies without artistic detail were part of a market for mass-produced goods that were traded between peoples in the region. The archeological record substantiates this claim as moulds used in the mass-production of tomb furnishings have been identified, and artifacts that bear the same resemblance found (Honey, 1945). The technological expertise to produce enormous quantities of tomb figurines fueled the duplication of popular designs that like their imitations required little technical ingenuity.

According to Hobson and Hetherington (1982) "it was a custom in China to put into tombs replicas of vessels and objects used in everyday life for the service of the dead in a better land". The practice of placing vessels and objects in tombs was not particular to China; tomb sites found in both Korea and Japan have also been found to contain similar items. These items generally include models of farmyards, granary towers, wellheads, cooking stoves, as well as jars, dishes, and cups (Hobson and Hetherington, 1982). The burial of clay cooking stoves, for example, was something common during the Han dynasty that makes clear the idea that even in death one would still need such items to prepare food (Laufer, 1962). In fact this practice was so widespread that it was not only practiced by China's imperial court, but it was a custom that extended to all classes within China

(Laufer, 1962). A similar custom was also evident in Korea and Japan with more expensive wares found at the tomb sites of aristocrats or well to do individuals.

Furthermore, the furnishing graves during the Han dynastic period was very elaborate, including such things as models of houses, farm-buildings of various kinds, grain-towers, mills, wellheads, fish-ponds, pigs in pig-sties, sheep in sheep-folds, dogs and their kennels, ox-carts, watch-towers, cooking-stoves, ladles and domestic vessels of all sorts, "as well as servants to wait upon the deceased, dancers and other entertainers to amuse him, and guardian spirits to protect him" (Honey, 1945). In subsequent periods the tomb-wares seem to have been less varied with food-vessels and figures of servants decreasing in frequency (De Groot, 1912; Hentze, 1928).

Confirmation that pottery found by archaeologists in tomb sites was in fact mortuary or burial pottery is provided by Chinese historical texts of the time. In a chapter in the *Annals of the Later Han Dynasty* a detailed description is given of the various objects made of pottery that were placed in graves (Laufer, 1962). What is of interest here is that the same pottery described in the *Annals of the Later Han Dynasty* was later excavated by archaeologists (Laufer, 1962). Pottery found in tomb sites corroborates the descriptions provided in Chinese historical texts and literature. In addition, clay replicas of daily life found in tomb sites reveal the non-utilitarian function of these pieces. The importance of these scaled backed models lies in the cultural beliefs of the times, as the fitting of tombs was considered important for ensuring a successful transition to the afterlife.

Cultural exchanges and contact between the peoples of China, Japan, and Korea also had an impact on the culture of East Asia (Clark, 2000). Examinations of tomb site excavations show that mortuary pottery in China, Japan, and Korea was, during this time, more similar than different. For example, Japanese and Korean pottery found in burial sites resembled the Tou type vessels found in Chinese tombs (Laufer, 1962). We can certainly qualify these observations by noting that indigenous items are far from absent (Fogel, 1996; Imamura, 1996). However, as early as 1200 B.C. similar style pottery is present throughout burial sites in East Asia. In looking at the similarities in the pottery styles, and the common nature of furnishings in tombs throughout East Asia, it is quite evident that trade was well established. Providing further support for the presence of trade linkages is the presence of Chinese wares in early Korean burial sites.

### **Deritualization and environment: Ecological relations in a dark age**

Over world history, analysts recognize the presence of disruptive periods that come to impact the patterns of everyday life. In European history the medieval period is often referred to as the Dark Ages, an interval in time characterized by political disunity, chaos, wars, popula-

tion loss, and a disruption of exchange networks (Chew, 2001). East Asian history and in particular Chinese annals, is witness to these periods as political, social and economic life is disrupted. Centuries after the collapse of the Han dynasty, China fell into political disarray and decline. The chaos and disorder experienced in China bears a strong resemblance to that often referred to by historians as the European Dark Ages. This time period is traditionally seen in Chinese history as a negative break from the progress experienced for centuries from the Qin to the Han dynasties (221 B.C.-220 A.D.). The incessant wars and political fragmentation that characterized the Dark Age period came to disrupt trade between communities in East Asia and regions westward. During periods when traveling conditions were difficult foreign trade through specific trade routes slowed or came to a halt. The instability of trade during the period not only impacted Chinese traders, but foreign merchants many of whom acted as middlemen. There was, for example, a collapse of political authority in northern China early in the fourth century, which impacted middlemen as a result of not being able to enter previous economic centers such as Loyang. In a correspondence to a merchant in Samarkand, a Sogdian middleman writes, "and, Sir, it is three years since a Sogdian (Iranian) came from "inside" (China). And, Sir, if I wrote 9and told you) all the details of how China fared 9what happened to the China trade), it would be (a story of) debts and woe; you have no wealth from it" (Mitra, 2003).

The decline of the Han dynasty also saw the deterioration of China's elaborate and extensive road system (Smil, 1994). The network of roads that supported overland trade and made possible the distribution of goods that arrived at ports was disrupted. One can surmise that as a result of war, political instability and decreasing trade, roads became harder to maintain. This would then impede the movement of people and goods, and would only help exacerbate already difficult conditions. The land-borne transportation of goods and people deteriorated to the point, in some regions, that previous connections between communities were disrupted (Smil, 1994). The link between ritual, and periods characterized by social disorder, instability, and resource scarcity is clear in the Chinese conceptualization of culture. As addressed by Xun Kuang, a philosopher writing in the third century B.C., rituals are of crucial importance to the cultural life of peoples:

By following ritual, there is order and success; by not following ritual, there is shiftlessness and chaos, sloth and neglect... there will be indolence, depravity and perversion, vulgarity and wildness (Goldin, 1999).

The argument raised by early philosophers, such as Confucius and Mencius, is that following rituals has it rewards (Le Blanc and Blader, 1970 and 1987). Proper observance of rituals translates into social order, abundance and harmony, while the absence, or inappropriate observance, of ritual leads to negative outcomes such as

scarcity. From the ideas that survive in written texts of the periods under study, the argument can be made that the emergence of a Dark Age would have signaled to people that rituals weren't properly practiced.

Stated somewhat differently, from the perspective of structural ritualization theory disruptive periods such as Dark Ages can lead to a condition of deritualization, that is, the breakdown of ritualized symbolic practices. Human conduct that constituted or characterized the proper observance of ritual in this period was questioned, collapsed and decreased (Cohen, 1978). In particular, the conspicuous and extravagant manner in which people carried out rituals came under increasing attention and criticism by both philosophers and government officials. In fact, edicts were issued before the onset of the Dark Age to curb the consumption of wares linked to the observance of funerary rites (Medley, 1976). Despite the edicts, the demand for bronze vessels, which were used extensively in burials during the pre-Dark Age period at times exceeded supply during the Dark Age with the result that the costs of wares and vessels became expensive? In order to accommodate the demand less expensive earthenware was used, and preferred, for mass-produced funerary goods during this time. Potters continued to use traditional bronze forms, such as the Hu, when making these ceramic imitations and the glazing was chosen to mimic the appearance of bronze.

Supply problems linked to social and ecological crisis may be the reason why certain products were no longer present in areas outside of production centers (Chew, 2001). Demand for Chinese ceramics reflects this in that consumer tastes didn't change, but as a result of lower production in China the availability of Chinese wares decreased. That consumer tastes didn't change during this period is reflected by the re-establishment of Chinese pottery exports to Japan and Korea by the eleventh century (Honey, 1948; Wilson, 1995). During the period, resource extraction, tied to the manufacturing of Chinese ceramics coupled with the clearing of the forest for agriculture, animal husbandry, population growth, and urbanization all had a degradative impact on the environment. Kiln losses can be tied to the ecological crisis, as production decreases and economic stagnation reduces the demand for certain ceramics, especially luxury wares. The manufacturing of luxury items, such as porcelain wares, was reduced to the point that trade in Chinese ceramics diminished. That Japanese import of Korean wares increased during this period point to the disruption occurring in China (Wilson, 1995). However, Chinese wares were still sought after by both Korean and Japanese elite demonstrating the prestige associated with Chinese ceramics.

At the same time, during this period, innovation is taking hold in other areas of the regional trading system. For example, we observe that both Korean and Japanese pottery begins to take on a style different from that of Chinese wares. Unglazed wares become more prominent

and in Korea different shapes and decorations emerge (Honey, 1948). Additionally, during this period, tomb sites in Korea show the shift from glazed to unglazed tomb-wares (Honey, 1948). The lack of wares coming from China due to kiln losses did have an impact on regional artisans. Wilson (1995) points out that Japanese artisan drew their inspiration from the wares imported from China. Not only did Chinese wares inspire artisans in Japan, but also many of the skills utilized by Japanese potters were drawn from techniques developed in cultural centers like Chekiang. If one examines burial practices during this period one can see that locally produced items increasingly replaced Chinese wares (Honey, 1948).

Archaeological excavations of tomb sites during this period suggest that societal disruptions were occurring that impacted burial practices. Examinations of Japanese fifth-century grave sites show that tombs were large, as illustrated by giant mounds in the Osaka region (Farris, 1985 and 1998). What is of interest is that these practices are discontinued and replaced with smaller tombs by the sixth-century (Farris 1985). Economic stagnation coupled with environmental limitations within Japan and abroad alters the elaborate burial practices prior to the onset of the Dark Age. Evidence that smaller tomb mounds appear during an East Asian Dark Age reveals a less exuberant and elaborates lifestyle than that depicted in tomb sites in earlier periods.

Environmental stress on China's landscape as a result of economic growth and cultural lifestyles eventually led to a decrease in manufacturing processes such as the pottery industry after the sixth century. When coupled with other environmentally degradative practices, the manufacturing processes involved in the mass production of Chinese pottery further exacerbate the assault on the landscape. The construction of kilns, the fuel needed to fire up the kilns, and ships required transport and distribute Chinese ceramics all required resources, particularly wood. In looking at iron manufacturing centers during this period we see that in order to meet fuel needs not only was coal substituted for wood, but also these centers were moved to other areas where forests were still present (Hartwell, 1967). The interconnections present in the creation of a finished product show that besides human ingenuity resource extraction is required to not only create a finished product that can be sold, but to get products to consumers as well. Economic decline can also be tied to a mismanagement of local natural resources or an inability to secure resources through the expansion of trade into areas abundant with the materials necessary to maintain consumption and economic growth.

Already at the start of the pre-Dark Age period, around 200 B.C., archeologists note the presence of Chinese goods and wares on the Japanese islands. These cultural exchanges had a significant impact on the customs and rituals that would develop in Japan. This is most clearly seen in archeological excavations of tomb sites as they provided glimpses into the daily lives of people in East

Asia. Like the Chinese, people in Japan had developed the custom of burying objects with their dead and creating mounds to mark these tombs. In Japan these tombs during the pre-Dark Age period bare a clear resemblance to Chinese tombs traced to the same period. However, during the Dark Age period tomb styles change in Japan, and are differentiated by their distinct construction style.

In fact, the name Kofun is given to the period in Japan that marks the emergence of these unique tomb mounds on the Japanese islands. Kofun literally refers to grave mounds, and speaks to the custom of placing the dead in earth hills. Although Kofuns were the name given to large Japanese tomb mounds for powerful members of society, common people also observed the custom of placing the dead in burial mounds albeit smaller ones. Like Chinese tomb sites uncovered, archeologists find that Japanese tombs also contained figurine replicas of men, women, animals, buildings and food. Unlike Chinese figures, locally made Japanese figures were often left unglazed and were less elaborate. The practice of placing Haniwa or clay figurines on top of tomb mounds also emerges in the early part of the Dark Age period, and by the end of the Dark Age these Haniwa become more elaborate and take the shape of terra cotta figures (Brown, 1993).

During Dark Age periods, analysts have noted that the activity of keeping written records is not a priority. The argument has been made that the Kofun period marks the beginning of Japanese history since records compiled exist after the period ended. It is considered Japan's protohistoric period. According to Keally (1969, 1972), the dating of this specific epoch is dependent on external records. Korean historical documents reveal heightened contact between the Japanese islands and the Korean peninsula that include a Japanese military. Additionally, the Chinese Dynastic Histories document diplomatic relations with the Yamato government (Keally 1969, 1972). The late Kofun period was the time when writing from China was first introduced to Japan. However, reflecting back on earlier periods the Kojiki, Fudoki and the Nihon Shoki make references to the 6<sup>th</sup> century (Keally, 1969, 1972). The lack of historical accounts of the Japanese Islands during the Dark Age period has left some questions about the time period. However, by observing ritual practices, and in particular, burial rituals (that is the Kofun mounds) several insights can be gained that are not available to us in writing dealing with questions of cultural diffusion and the emergence of local practices during the Dark Age.

From the items contained in Kofun period tomb mounds one can clearly see the cultural exchanges and influences operating between Korea and Japan. The pottery from the Kofun era is clearly derived from the contemporary pottery of Korean artisans, which in turn resembles styles visible in China (Perez, 1998). Although Japan for some time appears to be cut off from China during the Dark Age period, the Japanese islands remain in

contact with the Asian mainland via Korea. Exchanges between Japan and Korea continue to some extent, and provide a route for Chinese goods to continue to enter the Japanese islands. However, the intensity and number of trade linkages and exchanges decrease during this period allowing for local goods and ritual practices to flourish. Given the disruptive period China underwent during the Dark Age period, one can surmise that foreign access to Chinese goods and artisans became difficult. During this era contact with the mainland via Korea would have increasingly been important. The increasing contact with Korea would have allowed for greater cultural exchanges between Korean Kingdoms and Japan. Physically this manifested itself in the pottery found in excavations of tombs in Japan during this period. According to Wilson (1995), as early as the fourth century A.D. Korean wares were heavily influencing items used in Japanese burial offerings.

To the west, Silla style pottery, for example, crossed the Tsushima Strait and into Japan. From the fourth to the sixth centuries there was probably migration from Korea to Japan; in sixth-century Japanese tombs articles have been found that correspond to those placed in Korean tombs (Pearson et al., 1989). These articles probably belonged to Korean immigrants, or may perhaps have been imported from Korea.

Analytically, several observations can be made about the connection between ritual, society, and periods of societal ascent and decline. It is clear that a link does exist before the preceding pre-Dark Age and the subsequent disruptive period that would take hold for close to four hundred years in East Asia. The Dark Age period is evident not only in the wars, population losses, political fragmentation, but in the decreasing trade and cultural contacts that are physically recognizable. The disruption impacted the availability of previously sought after Chinese wares, including tomb furnishings. However, this created the opportunity for local pottery industries, and local artisans, to fill the void left by the lack of available Chinese goods. The archaeological record substantiates this point as excavation of Korean and Japanese tomb sites reveal the diminishing presence of Chinese items, and increasing presence of locally produced tomb furnishings (Honey, 1948; Wilson, 1995).

### **The assault on nature continues: The post-dark age**

The period after the Dark Age marks a peak in Chinese and East Asian history (Williams, 1928; Huang, 1989; Meyer, 1994). With the emergence of the Tang dynasty in 607 A.D. East Asia renews the deep interconnections once exhibited in the pre-Dark Age. After a historical period that saw wars, political fragmentation, environmental degradation, famine, and drought the post-Dark Age can be described as a return to the prosperous stretch of time that was the pre-Dark Age. A Chinese historian describing the Tang period writes "a period of recovery from

many disasters (emerges)... a long epoch of wealth, safety and low prices, when there was no costly thing in the Subcelestial Realm" (Schafer, 1963). Following a period of instability, historians note a transition into centuries of economic stabilization and growth, along with a re-intensification of cultural contacts (Adshead, 1988).

Analyses of the extent of environmental degradation throughout China's imperial age suggest that nature was under constant assault by human communities within the Chinese mainland. However, at certain periods the environment is at greater risk than others. The prosperity, stability, and renewed intensity of trade linkages meant that the environment was again under increased assault. Although the Dark Age period provided some time for environmental renewal, it was short lived and did not translate into an absence of environmental stress. Consumption of environmental resources continues during the Dark Age, even if this use is not at the extravagant levels it once was. The continued reliance on natural resources still impacts environments to the degree that not all fully recover after long periods of extensive extraction. However, the Dark Age period did reduce the stress on local environments so that once bare areas of forest could now again be harvested. However, the fragile state that many environments found themselves in led to resource extraction of previously pristine areas, and a greater reliance on the importation of resources outside of the Chinese mainland.

In pursuit of timber all possible sources of wood within the Tang Empire were identified and utilized. The heavy use of timber in earlier times in the North meant that areas in the South were now increasingly relied on. Coastal districts came under assault, and people were sent to fell trees in southern provinces. Imported timber also became important to the maintenance of the consumptive lifestyle of the times. Yang (1969, pp. 218-219), in this regard, makes the following observations:

In addition to native produce, Chinese builders also made use of imported timber...much fine timber was imported from Japan, notably at the celebrated port of foreign trade Ming-chou, modern Ningpo Japanese pine wood (was used) to construct the Ts'ui-han T'ang or Hall of Green Chilliness.

As the economy of the Tang period flourished, the demand for timber increased. In fact, consumptive habits were a reflection of the prosperous times and mirrored the exuberance of the pre-dark age period. The only change between the pattern of consumption in the pre and post dark age periods is that in the latter consumption involved a larger network. The expansion of trade linkages in the post-dark age period meant that East Asia, and China, had greater access to raw materials and finished goods from the west. Not only was trade expanded westward, but also trade in East Asia was intensified. This translated into a greater demand for wood products that would in later centuries result in a depletion of forests in Japan, Korea, and areas within the Chinese mainland.

The stress placed on Chinese, Korean and Japanese forests was tied to demand. According to Schafer (1963), "the men of T'ang had a fine variety of native woods to provide them with the useful artifacts to which they were accustomed: a native rosewood for axe-hafts; sour jujube, tough and fine-grained, for axles, spoons, and chopsticks; camphorwood from south of the Yangtze to make boats; paulownia from Szechwan to make the zithers (furnished with jade pegs, and strings of silk from Chekiang) and beautiful harps of medieval China." In addition, woods such as sandalwood were imported and in wide used. Sandalwood in particular was used in the manufacture of both utilitarian and ritual objects. Describing the use of sandalwood in Tang times, Schafer, (1963) writes, "Sandal was a wood of luxury as well as a wood of religion."

In regard to the use of wood in Tang times one finds that "the wood products of the southernmost part of the empire were much in demand, since more of the original forest remained there than in the north, and that subtropical land was rich in hardwoods" (Schafer, 1963). These hardwoods were sought after and prized not only in China, but also in Korea, Japan, and areas outside of East Asia. Among woods used during the period, hardwoods emerged to be considered a luxury. The opulence of the times and its link to wood is noted by Schafer, (1963):

Early in the eighth century unheard-of heights of luxury were achieved in building and furnishing the mansions and palaces of the members of the imperial family and of the great aristocrats...The demand for fine woods was enormous, and stupendous sums were expended to denude whole mountains to obtain them.

In addition to the deforestation of forests for the manufacturing of everyday use objects such as eating utensils and furniture, wood was extracted to supply fuel for the various smelting furnaces that were used in the manufacture of funerary ceramics. Additionally, the production of tomb furnishings, that included jewelry, depended on gold and silver extraction processes. Silver and gold mines required wood for initial extraction, but the smelting and later manufacturing of finished goods such as jewelry requires additional fuel that would place further stress on local forests.

The economic and cultural progress during the Tang dynasty established a climate in which both arts and crafts flourished in China. Along with painting and calligraphy, Chinese artisans and craftsmen worked on sculptures, metal works, and ceramics. In regard to the latter pieces were made for utilitarian purposes, but also many ceramics became a part of funerary rites. Burial figurines, and other ceramic pieces, were often turned out in quantity from molds, and there is much duplication to meet the exigent demands of the times (Scott, 1967). This attests to the popularity of ceramic pieces not only in China, but also in abroad. In fact, the demand for tomb pieces became so great that number of the figures used in burials

came to be standardized by law in the eight century A.D. (Honey 1945; Mahler 1959). An imperial order was decreed in 741 A.D. to limit the number of objects that would be allowed to be placed in tombs (Honey, 1945). The goal was to curb wasteful and ostentatious displays, and prevent the financial strain the ritualized practice of tomb furnishing placed on families. However, it also appears to have been widely disregarded by many within Chinese society. Addressing this issue Prodan (1961) writes:

It became the mode to use the age-old custom of tomb-furnishing for purposes of social competition. But the quantities (of tomb furniture) are enough to reveal how widespread was the custom and how it permeated society from the highest to the lowest. They reveal, too, that a chronicle's account of the financial disasters of some families in their effort to keep up with their neighbors is more than probable. Before the first hundred years of the T'ang dynasty had run out, an imperial edict was promulgated laying down strict specifications for the practice of tomb decoration. It was decreed that a personage above the fourth rank could be accompanied by no more than 40 pieces. The rules also fixed the maximum size of the pieces, and specified that the statuettes and pots which were to accompany princes were to be drawn from the stocks of the 'Imperial Department of Model Makers'...This ruling cannot have been enough to curb extravagance.

The ritual for furnishing tombs with all form of figures reached new heights during the Tang period. Despite imperial decrees, the great number often found in single tombs of the post-Dark Age speaks to the popularity and continuity of this practice.

Similarly in Japan and Korea, the custom of placing objects in the tombs of the deceased continued. During the period, cultural artifacts found on the Korean peninsula and Japanese islands include both imports and local products (Wagner, 1987, 1993, 2001). In practical terms, the possibilities are that any particular tomb artifact may have been imported from outside, made locally from imported raw and finished materials, or made locally from immediate resources. During the United Silla dynasty (A.D. 668 A.D. 935) in Korea, a period that roughly corresponds with China's Tang dynasty, we increasingly see the presence of wares that can be considered distinctly Korean (Honey, 1948; Gompertz, 1968). We also see in Japan during this period a new type of high temperature work known as ash-glazed wares (Wilson, 1995). The introduction of tea into Japan via China in the eight-century also encouraged the emergence of native stoneware during this period (Wilson, 1995). Unglazed wares developed during the Dark Age period were still being produced in Japan, and in fact the volume of production in unglazed wares in Japan exceeded that of those that were glazed (Wilson, 1995). Although unglazed wares were widely produced in Japan we do see that they varied from their predecessors in early periods as more

elaborate styles emerged.

As trade and production of certain products decreases or comes to a halt during the dark age, human communities are presented with an opportunity to overcome the absence of previously abundant goods and resources. In the case of tomb furnishing, although trade exchanges are disrupted, the reproduction of Chinese wares in Korea meets demand on the peninsula and Japanese Islands. In addition to new sources of goods and resources emerging, human communities were more heavily relying on locally produced objects. Korean and Japanese markets met demand through the objects produced by local artisans. Additionally, new styles and designs emerge and technology is improved upon to allow for continued practice of important cultural customs. For example, a new aesthetic emerged in Korea and Japan as unglazed and lead glazed pottery became popular and used in the practice of tomb furnishing. It is important to note that despite disruptions in the production and trade of pottery the ritualized practice of tomb furnishing continues. Human communities may now make do with objects of different design or origin, but they nonetheless serve the same function as previous items.

In the study of social change analysts recognize that "nothing is more obvious than the conservative bent of human behavior, the manifest desire to preserve, hold, fix and keep stable" (Nisbet, 1969). Historically, persistence and change is observed in the East Asian regional system. There is a dualism present as one observes both permanence and change (Eastman, 1988). This observation rings true in East Asia as human communities sought to continue with important ritual practices and traditions by utilizing what was available and creatively developing new ways of fulfilling economic and cultural needs.

## Conclusion

Despite the negative imagery the adjective "dark" connotes, an East Asian Dark Age created an environment where human creativity and ingenuity emerged in response to changing social and physical conditions. During a Dark Age characterized by environmental scarcity, political fragmentation, and a breakdown of established trade, the material conditions necessary for the maintenance of ritualized symbolic practices led to ritual transformation and a greater emphasis on local practices within the regional trading system. Our research indicates that a disruption in trade linkages, as observed during a Dark Age, can create an opportunity for a renewed appreciation of indigenous goods and practices. Whereas in the pre-Dark Age we observe that Chinese items were sought after and Chinese ritual practices adopted or emulated, in the Dark Age, an opportunity is created to revisit and celebrate the local. Clearly observed is a change in aesthetic preferences as social networks are disrupted which in turn creates opportunities for old or new objects to be prized (Bourdieu, 1977). Our research also makes

explicit the long history of cultural borrowing present with in East Asia and its continuity despite periods of social disruption. In regard to the post-Dark Age, exchange networks are restored as trade between East Asian communities re-intensifies. While Chinese cultural items are again sought after, the appreciation gained for local items and ritual practices endure into the Post-Dark Age.

This study demonstrates that these disruptive periods produce outcomes that reveal the enduring power of rituals and the ability of societies to cope with and adapt to changing circumstances, that is, disruption and deritualization. Indeed, rituals are a key component of social behavior. When confronted with a disruption, human communities will often find ways to minimize its impact through such behaviors. Such endeavors utilize available resources to reconstitute modified ritualized symbolic practices. As made clear in our research, although ritualized practices are disrupted during a Dark Age, rituals endure. Business as usual appears to be the hallmark of ancient peoples as well as contemporary society. Material scarcity does not lead to an abandonment of funerary rites, but rather their transformation. Ultimately, we find that a Dark Age can spark a reassessment of practices as individuals critically assess whether the symbolic nature of the ritual shall remain intact when the usual material objects are scarce or absent.

Notwithstanding these findings, it is important to note that there are certain limitations to this study. First, the interpretations others and we make from historical documents can be questioned. The usage of secondary archaeological and historical sources introduces into the study descriptions of archaeologists and historians who offer their own interpretations and visions of ancient East Asia. By utilizing primary sources of information, such as the Chinese Dynastic Histories, we not only supplement the secondary information, but also validate the accounts of contemporary historians. However, it is significant to note, even then we interpret the subjective accounts of ancient historians, ritualists, and court scribes. Furthermore, the interpretations we draw from it make it difficult to accurately assess changes in meaning as linked to resource availability and the practice of rituals.

Second, because the bulk of primary information about East Asia is derived from Chinese historical documents, the study could be criticized as presenting a Sinocentric view of intra-regional relationships in East Asia. In future studies this limitation will be addressed by the translation of additional regional historical texts such as the Korean *Samguk Sagi*. However, the majority of information on the region for periods as early as the third century B.C. will still be Chinese documents, since Korean and Japanese histories emerge much later. There are many questions that remain unanswered about the connection between ritual life and material resources during the period under study. The inferences we make from available data can certainly be further explored, along with new questions as more historical and archaeological material

surfaces.

Third, our usage of Dark Age to describe the disruptive period that occurred in East Asia can be questioned. Although the term Dark Ages is used by historians and anthropologists to specifically denote a time during the middle ages in Europe from the sixth century A.D. up until the 11th century A.D., we argue that periods with characteristics that define the European Dark Ages have taken place historically in other regions and in far earlier periods (Chew, 2001, 2007).

Of course this investigation has implications for future research. Most importantly, the need exists to further examine the impact periods of disruption have on the cultural life of human communities in East Asia (and other regions of the world). While we explicitly address the influence an East Asian Dark Age had on tomb rituals, there are many other ritualized symbolic practices that can be analyzed. Investigation of these kinds of issues would provide a broader and more nuanced analysis of the linkages between ritual and nature during periods of change such as these. Such research would not only contribute to our understanding of macro level global developments involving the interconnections of nature and culture but also structural ritualization theory, especially work concerned with disruptions of group life, deritualization, and the reconstitution of ritualized activities.

In conclusion, we would emphasize that while nature (and the resources derived from it) are essential to ritual production, the ritualized practices human communities engage in over time have implications for nature. Early Chinese philosophers recognized this, as an excerpt taken from the early writings of Hsun Tzu reads:

If, in seeking, people have no measures or limits, then there cannot but be contention. Contention makes chaos, and chaos privation. The Former Kings hated such chaos, and established ritual and morality in order to divide them (that is people), in order to nourish people's desires and grant what people seek. They brought it about that desires need not be deprived of objects, that objects need not be depleted by desires; the two support each other and grow: this is where rituals arise from (Goldin, 1999).

Explicit in historical and philosophical writings of the time are ideas about the nexus binding society to nature. The importance of nature for the continued existence of human beings and their cultural life, which includes ritual, did not escape ritualists and philosophers of the time. Far from absent, ecological relations were considered and became a part of the discourse on ritual.

Such sentiments presage the growing demand for a much broader analysis of the causes of contemporary environmental changes, the consequences of these changes to human populations, and the scale of the responses different populations are capable of in order to adapt to or mitigate these changes (Clark, 1977; Harrison and Gibson, 1998; Moran, 2000). In that spirit our research advocates mindfulness of the past and turns to

history to implicitly raise questions about the present. While history serves to remind us that a marked feature of human populations is their ability to adapt to environmental and social disruptions, it also calls attention to the persistence and longevity of ritual practices (albeit in sometimes modified forms) that may continue to have a degradative impact on the environment.

## ENDNOTES

For theoretical discussions and research employing this framework see Knottnerus (1999, 2002, 2005, forthcoming a, b), Knottnerus and Van de Poel-Knottnerus (1999), Van de Poel-Knottnerus and Knottnerus (2002), Sell, Knottnerus, Ellison, and Mundt (2000), Knottnerus, Monk and Jones (1999), Guan and Knottnerus (1999, 2006), Knottnerus and Berry (2002), Knottnerus and LoConto (2003), Knottnerus, Ulsperger, Cummins, and Osteen (2006), Varner and Knottnerus (2002), Mitra and Knottnerus (2004), Thornburg, Knottnerus, and Webb (2007), Ulsperger and Knottnerus (2006, 2007), Wu and Knottnerus (2005, 2007), Edwards and Knottnerus (forthcoming).

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