

# Second Kyoto Workshop on Evolutionary Thanatology: “Death, Infants, and Children”

Kyoto University (Yoshida Izumidono)

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Leading Graduate Program  
in Primatology and Wildlife Science,  
Kyoto University

**Information and registration:**  
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## Programme

09:30 Introductions

09:40 **Andre Gonçalves (Kyoto University)**: Comparative Thanatology: historical, developmental and evolutionary perspectives.

10:20 **Claire Watson (Kyoto University)**: Investigating factors underlying dead-infant carrying in nonhuman primates.

11:00-11:15 Coffee

11:15 **Jim Anderson (Kyoto University)**: How and what young chimpanzees might learn about death.

11:55 **Shoji Itakura and Serina Yamamoto (Kyoto University)**: Do infants understand the irreversibility and cessation components of death?

12:35-13:30 Lunch

13:30 **Oki Nakamura (Ritsumeikan University)**: Infants and children in burial practices during Japanese prehistory.

14:10 **Paul Pettitt (Durham University)**: Infants and children among the earliest burials: Social inequality and death in Palaeolithic Europe.

14:50 **Sarah Longbottom and Virginia Slaughter (University of Queensland)**: How modern children learn about death.

15:30-15.45 Coffee

15:45 **Sarah Longbottom (University of Queensland)**: Death understanding in rural and urban children.

16:25 **Sungeun Yang (Inha University)**: A phenomenographic approach to children's perceptions of death and loss.

17:05 Final Discussion

17:30 Close.

**Yoshida Izumidono** is location no. 76 in the plan below (in sector A1). It is on Marikoji-dori, a 5-minute walk from Hyakumanben and the main university campus.



## ABSTRACTS

**Andre Gonçalves:** Comparative Thanatology: historical, developmental and evolutionary perspectives.

Various scholars have proposed awareness of death as one of the defining traits of *Homo sapiens*. However, ever since Charles Darwin, a psychological continuity between humans and other animals has been argued for. Questions of how non-human animals respond and interact towards their dead have been at the center of the new field of Comparative-Evolutionary Thanatology. However, the emergence of this new field has been preceded by a long albeit scattered history in the form of anecdotes by naturalists and explorers. Despite numerous descriptions by contemporary researchers of behaviors toward the dead, the question of non-human animals' basic conception of death remains unanswered. On a behavioral level, social animals including non-human primates, cetaceans, proboscids and corvids exhibit many intricate and sometimes puzzling behaviors towards their dying which not only include direct physical interactions with corpses but also secondary interactions including vigils, guarding and visitations. On a cognitive level, detecting animacy and inanimacy activates distinct areas of the brain, but it is still unknown where the corpse, which possesses attributes of both, stands at this intersection. Via an analysis of the human and non-human thanatological and developmental literature, a hierarchical model of agency and death detection is proposed.

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**Claire Watson:** Investigating factors underlying dead-infant carrying in nonhuman primates.

Understanding the phylogeny of mothers' behavioural responses to the death of their infants will require further evidence from cases in nonhuman primate species. Many mothers carry their dead infant, typically for a few days, but in some cases for an extended duration. Carriage of the dead infant is often combined with grooming and apparently protective behaviour. Transportation of infant corpses has been observed in many species, but remains poorly understood in all. Reports are usually brief qualitative descriptions of isolated anecdotal cases. Analyses of multiple records of such events will allow: objective evaluation of contributing factors, and systematic comparisons within and across species and populations. I will present analyses of longitudinal data for two populations of Japanese macaques: a free-ranging population on Koshima Island; and socially housed captive groups at the Research Resource Station. I will draw comparisons with the only published analyses of longitudinal data on dead infant carrying, for the free-ranging Takasakiyama population, including carrying duration and population carrying rates. I will discuss the implications of these findings.

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**Jim Anderson:** How and what young chimpanzees might learn about death.

As they grow up in the wild many chimpanzees encounter dying and dead conspecifics of various age- and sex classes. Causes of death in chimpanzees include disease, general effects of senescence, killing by humans and nonhuman predators, accidents, and intra-specific violence. Chimpanzees also experience death in other species, not least those that they kill. Youngsters both observe how conspecifics treat corpses, and manipulate them themselves; manipulations range from play, gentle contacts and exploration, to various forms of rough handling, aggression, and consumption (including cannibalism). Given their capacities for self-awareness, empathy, and inferential reasoning, maturing chimpanzees' experiences of death may lead towards the emergence of an understanding of the *irreversibility* of death, and the

*non-functionality* of corpses. Their understanding of the *universality* of death remains unknown, but it seems reasonable to attribute them with knowledge that *most* if not all individuals *can* die. The absence of reports of suicide in chimpanzees might reflect lack of knowledge of their own mortality, despite daily efforts to avoid dying. Finally, the flexibility and purposefulness of techniques that chimpanzees use to kill suggest some basic knowledge about *biological causes* of death, although other aspects of their behaviour – such as non-avoidance of companions with contagious, potentially fatal diseases – suggests limited development of this cognitive component of their death concept.

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**Shoji Itakura and Serina Yamamoto:** Do infants understand the irreversibility and cessation components of death?

Even infants only 7 months of age show sensitivity to differences between “animate” and “inanimate.” It is important to understand how infants develop comprehensive knowledge about organisms. An understanding of death may be unique to some organisms; however, the origin of this concept in humans is not yet clear. To address this issue, we attempt to investigate whether infants understand the death of organisms, by employing a violation-of-expectation method. Slaughter et al. (2007) proposed five components of the death concept, including inevitability, universality, irreversibility, cessation, and causation. We focused on the irreversibility and cessation components. Our initial results are not definitive, but we discuss of the potential of our experimental approach and future directions.

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**Oki Nakamura:** Infants and children in burial practices during Japanese prehistory.

Because of acid soil, it is difficult to find skeletal remains of infants and children in the Japanese archipelago. In such circumstances, burial jars for infants and children are good materials to understand “Death, Infants, and Children” in prehistoric Japan. Burial jars for infants and children appeared in the northern Tohoku region around 5900 calBP (Early Jomon period) and continued to the first half of the middle Jomon (around 4800 calBP). In central Honshu, burial jars inserted under the floor of a pit-house became popular during the middle and late Jomon (around 5300 to 4000 calBP). It is interesting that these two burial customs became popular with rising populations. Furthermore, ritual objects related to infants and children, for example dogu clay figurines representing pregnancy and vessels depicting childbirth, increased in the both phases. There are some debates about clay tablets with footprints or handprints; charms for safe growth or reminders of dead infants.

In the final Jomon period (3200 to 2500 calBP), burial jars spread over a wide area in the Japanese archipelago, especially in the Tohoku, Tokai and Kansai districts. The occurrence of child burials with associated luxury grave goods significantly increased in Hokkaido and Tohoku. For example, at the Takasago shell midden in southern Hokkaido, child burial G10 contained 30 stone beads and two narrow necked pots. It would be possible to understand a reflection of social differentiation amongst adults. In this area, earth-banked burial enclosures for limited adult people with ritual objects were built, and a few pit burials contain various luxury goods. Grave no. 123 at the Karinba site in Hokkaido contained lacquered combs, lacquered earrings, stone beads necklaces and waist ornaments.

In the Yayoi period (2500 calBP to the middle of 3rd century), the introduction of rice cultivation was a driving force for new burial customs. In pit graves from the beginning of the Yayoi period, some clay figurines were found with small child bones. Burial jars became

popular again with the development of a new type of burial facility, named Hokei-shukobo, which is a square-shaped circular moat tomb. In the Kofun period (the middle of 3rd century to 7th century), infant burial jars ultimately declined, although some local communities continued to use this burial custom.

In the Nara period (710 to 794 AD), buried pots containing human placenta were inserted under the entrance of dug-standing pillar buildings (Hottatebasira tatemono). These are often associated with ink brushes, solid ink bars, small knives and coins with wishes for safe growth and social success. Coins are thought to be an offering to the gods.

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**Paul Pettitt:** Infants and children among the earliest burials. Social inequality and death in Palaeolithic Europe

The archaeology of the Palaeolithic spans the period when many essentially 'human' behavioural characteristics were emerging. Not least among these are recognisable ways of dealing with the dead. The European Middle and Upper Palaeolithic provides the earliest evidence for burial among the Neanderthals and early Homo sapiens respectively. Other means of dealing with the dead may be indicated earlier than this, in Europe and Africa. While burial is rare before the late Pleistocene, and therefore was probably not the main way of disposing of the dead, the burials we do have represent neonates, infants and children, as well as adults. I review the evidence for pre-adult treatment of the dead, comparing these with burials of adults. Using generalisations derived from ethnographically observed hunter-gatherer populations I draw some conclusions about the observed patterning, interpreting this in the light of the long-term evidence of mortuary behaviour represented by the Palaeolithic record. By doing so, I hope to link evidence of the treatment of the pre-adult dead among non-human apes, and in the more recent and modern worlds.

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**Sarah Longbottom and Virginia Slaughter:** How modern children learn about death.

Over the last centuries, decreases in infant and child mortality, urbanization and increases in health care efficacy have reduced children's personal exposure to death and dying. So how do children acquire accurate conceptions of death in this context? In this talk we discuss three sources of children's learning about death and dying, namely, direct experience of death, parental communication about death, and portrayals of death in media and the arts. We conclude with recommendations about how best to teach modern children about this aspect of life.

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**Sarah Longbottom:** Death understanding in rural and urban children.

Most developmental psychologists who study death awareness now agree that children typically understand death as a biological event between the ages of 5 and 7 years. This achievement coincides with the development of interrelated biological concepts such as life, what is inside the body, the functioning of vital organs, illness, and the distinction between living and nonliving. By comparing urban and rural children, we have been studying three potentially influential factors in the development of children's understanding of biology and

death: individual experiences, rearing environment, and parental communication about biological phenomena including death. Over 100 urban and rural children in Queensland between the ages of 3.11 and 8.11 years participated in face-to-face interviews including an adapted Standard Death Interview. Parents completed a questionnaire assessing farm involvement, experiences with nature and the lifecycle, and communication about death and dying. Preliminary results indicate that children living on and around farms have a significantly better understanding of death than their city counterparts, especially younger children. Additionally, how parents communicate about death and dying has a significant impact on their child's understanding of death, both overall and in particular aspects, such as irreversibility of death.

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**Sungeun Yang:** A phenomenographic approach to children's perceptions of death and loss

Death-related concepts are everywhere in children's ecological systems, including fairy tales, songs, picture books, games, and TV programs. Many children also directly experience the deaths of pets, family members, or friends. However, due young children's language limitations, adults often underestimate their knowledge and emotions concerning death. Developmentally appropriate research tools can help to understand how children conceptualize an abstract topic such as death. The present study used a phenomenographic approach to explore children's understanding of and emotional responses to death. Fifty-two Korean, 16 Chinese, and 16 Chinese American children aged 5–6 were encouraged to illustrate their concepts of death. They were given a blank sheet of paper and coloured pens, and asked to draw "whatever the word death brought to mind," and then to describe their drawings. If their drawings and narratives presented subordinate concepts of death such as finality, universality, causality, and noncorporeal continuation, further questions were used for clarification. Thematic analysis revealed that most children associated death with negative emotions. The core themes from their drawings included causes of death, attempts to stop dying, and situations after death. This study provides evidence for the usefulness of drawings as a developmentally appropriate data collection tool. The findings also enrich our knowledge about children's understanding of death, rooted in the inductive analysis of empirical data with children from culturally diverse backgrounds.