



# The touch of a child: An analysis of fingernail impressions on Late Woodland pottery to identify childhood material interactions

Steven G.H. Dorland

University of Toronto, 19 Russell St, Toronto, ON M5S 2S2, Canada

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## ABSTRACT

This paper proposes an analysis of fingernail impression dimensions to identify evidence of childhood interaction on pottery artifacts. Through a study involving 38 participants divided into four age categories, a comparative database has been developed to evaluate fingernail impressions on 21 fragmented learner vessels from the 15th century CE Late Woodland Keffer village in Ontario. A series of ANOVA statistics indicate that the fingernail impression dimensions found on Keffer vessels are statistically equal to data collected from child and juvenile categories. This approach provides a fundamental material constraint to aid in identifying children's actions and broader questions of childhood identity and agency.

## 1. Introduction

In this paper, I propose an approach to identify childhood actions through a fingernail impressions analysis. I developed a comparative dataset comprised of four age categories: child, juvenile, adolescent, and adult, which was used to compare fingernail impressions identified on learner vessels from the Keffer village, a 15th century CE northern Iroquoian village in southern Ontario. Rather than using the traditional term, juvenile vessels, I refer to the term learner vessels, which I have used elsewhere (Dorland, 2016a, 2016b, 2017b) and which has been adopted by Striker et al. (2018). The use of learner vessels reflects a level of potting skills and experiences rather than an *a priori* assumptions of skill and age. Through the application of four ANOVA statistics, I demonstrate that fingernail impressions on Keffer learner vessels were most likely caused by potters whose ages fall in the child and juvenile age categories. This study serves two central purposes. First, I provide a comparative dataset applicable to aid in the identification of childhood traces on archaeological material. Second, I demonstrate the contribution of experimental studies that directly involves children to investigate childhood in the past. Through this study, I contribute to the production of a more comprehensive understanding of past peoples and their experiences.

### 1.1. Finding children in the archaeological past

Children have been readily accepted as active agents in the archaeological past but finding material traces of child practice remains a challenge. Lillehammer's (2015) assessment of the state of childhood

archaeology highlights the growth of discussions that have resulted in the integration of childhood agents into studies of identity, personhood, and practice (see Sofaer, 2000; Sofaer, 2006, 2015; Ardren and Hutson, 2006; Baxter, 2005; Coşkun, 2015; Kamp, 2001a, 2002; Lally and Moore, 2011; Sanchez Romero et al., 2015). However, as stated by Meskell (2002), “children have been recognized as separate actors with separate identities, but archaeologist still struggle to remove children from the ghettoization of the study, and to integrate such studies in broader discussion.” (2002: 283).

One potential reason for this ghettoization is related to Lillehammer's (2015) critique of insignificant methodological developments in childhood archaeology that have not adequately supported theoretical developments. A central critique of childhood archaeology concerns a simple question: how do we recognize children's visibility in the archaeological record? There are two elements to this question. First, the basis of this question is rooted in implicit assumptions of the identity of the primary actors who manipulate materials and leave archaeological traces. This type of question was posed first in the early stages of feminist archaeology when gender and women's roles were being addressed (see Wylie, 1991). Depending on the historical context, this question can also be peculiar. Demographic studies of non-industrial societies and pre-contact societies indicate community members that fall between infancy and adolescence comprised of a significant portion of the population (Chamberlain, 1997, 2000). Warrick's (2008:185–191) demographic study further demonstrates that childhood agents in northern Iroquoian village populations consisted of approximately 45–55% of the village population. Even with high infant mortality rates, there were still considerable numbers of past childhood

E-mail address: [steven.dorland@mail.utoronto.ca](mailto:steven.dorland@mail.utoronto.ca).

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actors who engaged with cultural material and left their archaeological traces.

Second, not all historical contexts provide clear evidence of childhood practice. Often, social practices result in the hiding of actions or prevent actions from being recovered in the archaeological record. As an example, Wallaert (2012) states how the firing of pottery vessels took place only in later stages of pottery apprenticeship in the Pueblos and among the Dowaro of Cameroon. Without the firing of the vessel, there is a much higher probability the vessel would not make it into the archaeological record. Hutson (2015:56) has argued that we must remove ourselves from always looking for “smoking gun” evidence and find other ways to understand children's interaction with their material environments. I agree with Hutson's point, however, certain historical contexts are supported by rich historic and iconographic data that help complement more indirect approaches. Unfortunately, not all archaeological contexts have sufficient supportive evidence to help contextualize childhood agency.

Bioarchaeological frameworks have provided effective approaches to the study of childhood (Andrushko et al., 2011; Beaumont et al., 2013; Wright et al., 2010; Watts et al., 2011). However, this type of data is less effective in comparison to material culture studies for understanding the integration of children into broader production practices. Recently, child performance has been approached through the study of decoration and fine-motor control (Crown, 2001, 1999; Smith, 2005; Budden, 2008; Budden and Sofaer, 2009). A decorative analysis can be effective, however, in certain cases, such as the Lower Great Lakes, the majority of vessels believed to have been made by children are plain or have very little decoration. For example, in Smith's (2005) study of Late Woodland child vessels, 45.5% of the vessels studied were plain (2005: 72), which results in an inability to properly evaluate a considerable number of vessels. Bagwell's (2002) form analysis provides options to address form, but there has been little research that focuses on the difference between expedient practices of more skilled individuals and individuals with less experience.

The identification of direct traces of child action has been a highly effective method used to capture childhood presence in the archaeological record. Recently, analyses of finger flutes in caves contributed to investigations of children in Upper Palaeolithic ritual activities (Sharpe and Van Gelder, 2006a, 2006b; Van Gelder, 2015). In terms of material culture studies, Kamp et al. (1999) provided an effective model to identify children that is based on fingerprint dimensions and their relation to particular age categories though a ratio of fingerprint elements. Through an experimental study of children making fingerprints, a comparative dataset was built that was then used to identify child vessels from the Prehispanic Pueblos. This approach is highly effective in identifying children through fingerprints and influenced later fingerprint studies (Fernández and Chapon, 2015; Králík et al., 2002; Králík and Novotný, 2003; Králík et al., 2008), but the nature of certain assemblages makes this approach less applicable. As an example, Eastern Woodlands vessels are often highly fragmentary, which makes the identification of fingerprints more difficult. When fingerprints do appear, there often lacks a significant section of the fingerprint to accurately make assessments. In other words, partial fingerprint sections can be identified, but dimensions are more difficult to evaluate.

We need to identify material traces that can be directly linked to the actions of children. When evaluating skill, there has been insufficient research in this area to address how novice adult variation and novice child variation differ, and as a result, we work from assumptions that are often based on Western concepts of aesthetics. With that being said, the identification of certain material evidence provides a foundation for furthering studies of childhood action.

Kamp (2015) has suggested that experimental archaeology that directly involves children opens new opportunities for the development of archaeologies of childhood. Children's actions today, in terms of their tactile interactions with objects, are more related to childhood actions in the past when compared to predictive archaeological models. One

would assume this is an obvious point, but experimental studies that work with child participants are sorely lacking. To date, there are only a few experimental studies, including, Kamp et al.'s (1999) study discussed above, and Högborg's (2008) experimental analysis that compared a child's actions to archaeological material related to Scandinavian Neolithic axe production. Developing experimental studies with participants provides effective avenues to address childhood practice.

Building on earlier experimental studies, I propose an approach to identify childhood variation that is based on measurements of fingernail impressions. Fingernail impression analyses have been conducted in forensic studies for identification processes (Perper and Sobel, 1981) but has not been applied in archaeological analyses. Fingernail impressions are often identified and recognized as part of banded decorative motifs from a broad array of cultural and historical contexts (Egloff and Potter, 1982; Emerson, 1956; Fowler, 2006; Marshall and Robertshaw, 1982; Tsuneki and Miyake, 1996; Summerhayes and Scales, 2005), and yet, there has been no investigation to link the impressions to their respective owners. Data collected from fingernail dimensions provide an alternative to fingerprint impressions when evaluating fragmentary samples, and so I have developed a comparative framework that can be used to recognize fingernail impressions found on archaeological materials.

### 1.2. The study of childhood in the Lower Great Lakes

Archaeological studies of childhood in the Lower Great Lakes have focused mainly on bioarchaeological evidence to identify dietary practices and/or weaning (Forrest, 2017, 2010a; Pfeiffer et al., 2016, 2014; Watts et al., 2011). Some bioarchaeological studies have extended beyond subsistence practices and investigated relations between social meaning and burial practices of Iroquoian infants (Forrest, 2010b; Kapches, 1976). These contributions are critical in understanding certain questions of past lifeways, but there has been little focus on practice involved in childhood.

There are only a few studies that have primarily investigated childhood practice through pottery production (Pearce, 1978; Timmins, 1997; Smith, 2005). According to Warrick (1984), young girls learned to make pottery from their mothers, an interpretation that Smith (2005:71) has expanded on to include children learning from grandmothers. More recently, there has been debate in regards to the nature of learner assemblages. Both Braun (2015) and Martelle (2002) argue learner vessels were not associated with child learning but involved in ceremonial practices. Braun (2015:118–122) further stated that the production of learner vessels represents a separate communities of practice associated with ceremonial traditions in the 13th century CE. Recently, Striker et al. (2018) have suggested that the learner vessel assemblage from the 16th century CE Mantle site also included tester pots made by more experienced potters.

The classification measures used to produce learner assemblages results in a uncertainty that hinders our understanding of childhood practices. Often, childhood artifacts are mainly determined by intuitive frameworks rooted in an archaeologist's perception of child performance. As is the case in various archaeological contexts, Lower Great Lakes artifacts are often considered learner if they are small, crudely made, and do not fit in typological systems (Pearce, 1978; Smith, 2005). The emphasis of typological identifications causes the masking of artifact variation. As demonstrated by Braun (2015, 2010) and Striker et al. (2018), there are learner artifacts that demonstrate an exceptional level of technological skill. Furthermore, the “catch all” nature of learner assemblages is highly problematic. This view is supported by my doctoral research of northern Iroquoian learner assemblages from upstate New York and southern Ontario. In these assemblages, one would also find pipe fragments, bowl fragments indicative of manufacture by more skilled potters, and non-decorated highly fragmentary body sherds that provide little information regarding the skill or age level of the makers. In other words, the nature of the learner

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