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Author(s)	NEGAYAMA, Ko'ichi
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## DEVELOPMENT OF PARENTAL AVERSION TO OFFSPRING'S BODILY PRODUCTS : A NEW APPROACH TO PARENT-OFFSPRING RELATIONSHIPS

Ko'ichi Negayama  
*Waseda University*

### Abstract

Child custody includes elimination of bodily products from children's bodies although some products may result in negative feelings by caregivers, and aversion to older children's bodily products may be stronger. This study aims at examining the development of parent-offspring relationships through such aversions. Parents of infants ( $4.0 \pm 1.1$  months), kindergarteners ( $3.6 \pm 0.6$  years), and undergraduate students ( $20.8 \pm 1.4$  years) completed a questionnaire about the intensity of their aversion to bodily products (saliva, feces, fallen hair, nose dirt, phlegm, blood, urine, nail parings, scabs, grime, pus) of their offspring, of their own, and of others by imagining hand contact with each of them. The subjects were 25, 65, and 79 fathers and 36, 90, and 89 mothers for the three age groups, respectively. Results indicate that the products of students were far more disliked than those of young children. Aversion was significantly stronger in parents of kindergarteners than of infants toward feces, nose dirt, phlegm, and urine. It is notable that products of infants were significantly more acceptable for parents than those of their own, except for blood, nail parings, and scabs. Such acceptability decreased abruptly for kindergarteners. Products of students were conversely more disliked than the parents' own, except for feces. Nevertheless, it was still far more acceptable than products of other persons. Differences due to the sex of both parents and the offspring, or the offspring's birth order, were almost negligible in any age group. Thus, bodily products of offspring are considered to significantly mediate their relations with parents.

**Key Words :** parent-offspring relationship, aversion toward bodily products of offspring, infants, weaning, maturation

### Introduction

Parent-offspring relations are regulated not only psychologically but also physically, and the offspring's physical body is a significant determinant of parental behaviors. Appearance of infants, for example, is a cue for parents to enhance their care and protection (Alley, 1980, 1981, 1983 ; McCabe, 1984).

However, effects of the offspring's body on parental care are not always positive. Offspring's bodies produce various things such as feces, urine, and grime as a result of metabolism. Parents have an aversion to at least some of these bodily products even if they are produced from their own bodies, and products of other persons normally cause much stronger avoidance response.

Custody of offspring includes, as a necessary component, elimination of bodily products from offspring body surface or place around them (e.g., Lombardo, 1991). Thus, it seems adaptive for negative feelings to be suppressed in parents when taking care of young offspring.

Trivers (1974) suggested that conflict is a necessary component of a relationship between mother and offspring at certain stage of the offspring's development. The above-mentioned negative feelings for offspring by their parents may be related with conflict and hypothesized to increase with the offspring's age. In this sense, aversion by parents toward offspring's bodily products may be considered as one of the strong indicators of the developmental changes in parent-offspring relationship.

The present study aims at measuring the development of mutual independence between parents and offspring by comparing parents' aversions to various bodily products of offspring in three age groups—infants, kindergarteners, and undergraduate students.

## Method

### *Participants*

Parents of infants ( $4.0 \pm 1.1$  months; 39 sons and 22 daughters, 1 sex unspecified), of kindergarteners ( $3.6 \pm 0.6$  years; 103 sons and 53 daughters), and of undergraduate students ( $20.8 \pm 1.4$  years; 54 sons and 114 daughters) participated in the present study (see Table 1). They were randomly sampled from a list of residents of Tokorozawa, Saitama Prefecture, and were contacted by mail, after which they agreed to participate in the study. Parents of kindergarteners and university students enrolled in private kindergartens and a private university in Tokorozawa, respectively, were asked to participate in the present study by letter. Altogether, 25, 65, and 79 fathers and 36, 90, and 89 mothers participated in the study across the three age groups, respectively.

The participants were distributed a questionnaire and asked to respond to questions about the intensity of their aversion to bodily products (e.g., saliva, feces, fallen hair, nose dirt, phlegm, blood, urine, nail parings, scabs, grime, pus, slobber; see Table 2)

Table 1 Number of parents participating in the study

Offspring	Parents			
	Fathers	Mothers	Not specified	
Infants	Boys	15	24	0
	Girls	9	12	1
	Not specified	1	0	0
Kindergarteners	Boys	43	59	1
	Girls	22	31	0
Undergraduates	Boys	25	29	0
	Girls	54	60	0

table 2 Bodily products

Bodily products	Definition
Feces	Waste matters excreted from the bowels
Phlegm	Thick, semi-fluid substance forming on the skin of the throat, and brought up by coughing
Urine	Waste liquid which collects in the bladder and is discharged from the body
Pus	Thick yellowish-white liquid formed in and coming out from a poisoned place in the body
Grime	A coating on the body
Saliva	The natural liquid present in the mouth
Nose dirt	Semi-solid unclean matter in the nose
Fallen hair	Hair fallen off the head
Blood	(Common usage)
Slobber	Saliva running from the mouth
Scabs	Dry crust formed over a wound or sore
Nail parings	Nail cut away from the fingers

of offspring, of their own, and of others by imagining their hand in contact with each of them. The intensity of parents' feelings for each imaginary contact was recorded using a five-point rating scales (1: pleasant, 2: mildly pleasant, 3: neutral, 4: mildly unpleasant, 5: unpleasant). Parents were requested to choose for each question the most appropriate level of intensity in response to manual contact for each of the listed bodily products. The products were listed in the same order for the three different categories of each age group (i.e., offspring, own, and others) successively.

The foci of attention were on the parents' feelings toward the bodily products of their offspring in comparison with those of their own and of others, and on the differences due to the ages of offspring. Responses to products of others were collected in order to examine and clarify general aversion levels of parents to each of the bodily products. The level of statistical significance was set at 1% throughout the study.

## Results

### *Developmental change in parental aversion*

As Figures 1-3 show, parents generally had an aversion to products, and parents' aversions were strongest for products from the body of others. Levels of aversion to products of their own and those of others were constant across the three age groups. However, parents showed the least aversion to those of their offspring, with increasing dislike across age and with the highest aversion to the bodily products of undergraduates in comparison to those of themselves. The increase in parents' aversion toward the offspring's bodily products may be related with their psychological detachment from the offspring as caregivers.

### *Differences in parental aversion toward offspring and themselves*

By comparing aversion scores by parents toward the products of the offspring and of their own, it was found that the products of infants were significantly more acceptable than those of their own, except for blood, scabs, and nail parings by t-tests (Table 3). Such acceptance decreased abruptly for kindergarteners, which reduced the differences. On the other hand, parents had greater aversion to products of undergraduates than those of the parents' own, except for feces (Table 3). This may suggest an increase in physical

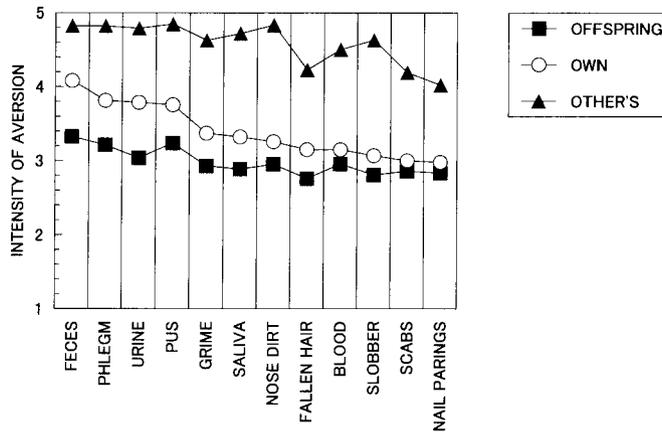


Figure 1 Parents' aversion to bodily products of infants

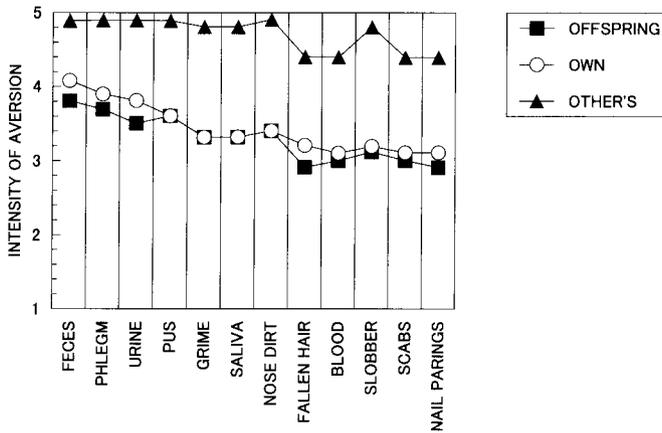


Figure 2 Parents' aversion to bodily products of kindergarteners

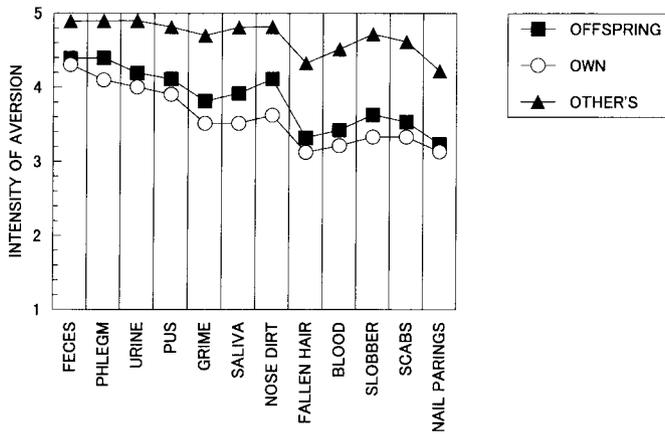


Figure 3 Parents' aversion to bodily products of undergraduates

Table 3 Significant differences in aversion scores to body products of offspring and of parents' own

	Infants	Kindergarteners	Undergraduates
Feces	Own > Offspring's	Own > Offspring's	
Phlegm	Own > Offspring's		Offspring's > Own
Urine	Own > Offspring's	Own > Offspring's	Offspring's > Own
Pus	Own > Offspring's		Offspring's > Own
Grime	Own > Offspring's		Offspring's > Own
Saliva	Own > Offspring's		Offspring's > Own
Nose dirt	Own > Offspring's		Offspring's > Own
Fallen hair	Own > Offspring's	Own > Offspring's	Offspring's > Own
Blood			Offspring's > Own
Slobber	Own > Offspring's	Own > Offspring's	Offspring's > Own
Scabs			Offspring's > Own
Nail parings		Own > Offspring's	Offspring's > Own

t-test, P < 0.01

distancing between undergraduates and their parents in everyday life. Nevertheless, the products of undergraduates were still far more acceptable than those of others.

Aversion significantly increased between infants and kindergarteners toward feces, phlegm, urine, and nose dirt (see Table 4, Scheffe's procedure). In other words, the waste products from the offspring's intestinal, urinary and respiratory organs more easily evoked negative feelings in the parents, and, in spite of this, aversion to those products of the infants was strongly suppressed. Those of undergraduates were, without exception, more disliked than those of younger children.

*Correlations in aversion between offspring and their own*

The intensity of parental negative feelings toward products of offspring and of their own might be correlated. Table 5 indicates correlation coefficients between the aversion scores to the products of offspring and of their own. The results indicate that the aversion scores to the offspring's and parent's own products were all significantly correlated for

Table 4 Multiple comparison among 3 age groups

	I vs K	I vs U	K vs U
Feces	<	<	<
Phlegm	<	<	<
Urine	<	<	<
Pus		<	<
Grime		<	<
Saliva		<	<
Nose dirt	<	<	<
Fallen Hair		<	<
Blood		<	<
Slobber		<	<
Scabs		<	<
Nail parings		<	<

Scheffe's procedure, P < 0.01

I: Infants

K: Kindergarteners

U: Undergraduates

**Table 5** Correlation coefficients of aversion scores to bodily products of children and of parents' own

	Infants		Preschoolers		Undergraduates	
	Father (N = 25)	Mother (N = 36)	Father (N = 65)	Mother (N = 90)	Father (N = 79)	Mother (N = 89)
Feces	0.28	-0.02	<u>0.54</u>	<u>0.71</u>	<u>0.73</u>	<u>0.8</u>
Phlegm	0.38	0.26	<u>0.47</u>	<u>0.62</u>	<u>0.63</u>	<u>0.74</u>
Urine	0.48	0.37	<u>0.68</u>	<u>0.66</u>	<u>0.73</u>	<u>0.7</u>
Pus	0.45	0.34	<u>0.71</u>	<u>0.61</u>	<u>0.74</u>	<u>0.79</u>
Grime	<u>0.82</u>	0.27	<u>0.63</u>	<u>0.59</u>	<u>0.75</u>	<u>0.77</u>
Saliva	<u>0.89</u>	<u>0.56</u>	<u>0.78</u>	<u>0.53</u>	<u>0.52</u>	<u>0.62</u>
Nose dirt	<u>0.75</u>	0.36	<u>0.69</u>	<u>0.48</u>	<u>0.56</u>	<u>0.6</u>
Fallen hair	<u>0.82</u>	<u>0.46</u>	<u>0.63</u>	<u>0.4</u>	<u>0.52</u>	<u>0.68</u>
Blood	<u>0.63</u>	<u>0.6</u>	<u>0.69</u>	<u>0.49</u>	<u>0.7</u>	<u>0.77</u>
Slobber	<u>0.75</u>	<u>0.77</u>	<u>0.61</u>	<u>0.45</u>	<u>0.4</u>	<u>0.59</u>
Scabs	<u>0.94</u>	<u>0.69</u>	<u>0.86</u>	<u>0.72</u>	<u>0.68</u>	<u>0.65</u>
Nail parings	<u>0.93</u>	<u>0.65</u>	<u>0.81</u>	<u>0.68</u>	<u>0.71</u>	<u>0.65</u>

Underlined:  $P < 0.01$  (Two-Tailed)

kindergarteners and for undergraduates. In contrast, infancy was unique in that there were no significant correlations for responses to feces, phlegm, urine, and pus by either parents and for grime and nose dirt among mothers.

Differences due to sex of both parents and the offspring, or the offspring's birth order, were almost negligible in any age group.

## Discussion

These results strongly suggest that parents' dislikes of offspring's bodily products are weak during infancy, and increase with the offspring's development. The aversion was most remarkable for the bodily products of the offspring's intestinal, urinary and respiratory organs, in spite of those products having positive functions between mothers and infants in some mammalian species (Gubernick & Alberts, 1983; Holinka & Carlson, 1976; Horrell & Hodgson, 1992).

In the present study, parents had less aversion toward products of the infant bodies than the parents' own products. Moreover, sex of parents, and sex and birth order of offspring hardly produced significant differences, which suggests age as an outstandingly important factor in the intensity of aversion.

Nourishment by milk and/or solids is essential for the survival of offspring, and this is actualized through various interactions between offspring and their parents, which is related with mutual independence of mothers and infants (Crow, Fawcett & Wright, 1980; Negayama, 1993). Aversion by parents was most evident for feces, and they are produced out of food taken by the offspring. It is often said by mothers of weaning infants that infants' feces begins to smell bad after introduction of solids, and an unpublished study by the present author actually indicates that a sudden increase in this aversion occurs soon after introduction of solid-food. Weaning is not simply a drastic change in food but a change in offspring's behavioral autonomy and mother-offspring relationship (Martin, 1984) and, as Trivers (1974) pointed out, the relationship includes conflict between mothers and offspring. The sensory aversion examined in the present study thus seems to

be both an outcome and a regulator of parent-offspring mutual independence, which outlines development of the relationships.

There was a big difference in the aversion between kindergarteners and undergraduates. Sexual maturation normally triggers separation between animal parents and offspring to avoid incest. This kind of separation between parents and offspring might be promoted by the parents' aversion to the bodily products of sexually matured offspring.

The bodily products of offspring are generally disliked by the parents, but nevertheless, it is also plausible that everyday contact with such products would increase the parents' feeling of responsibility for their offspring. In this sense, the bodily products of the offspring might function as an enhancer of the bond. Thus, the aversion to bodily products is of fundamental importance in understanding the development of parent-offspring relationship and the offspring's separation-individuation (Mahler & La Perriere, 1965).

In spite of these interesting suggestions, the importance of this study is limited because it focuses only on the feelings of parents as an indicator of their relations with offspring. These aversions might be connected with parents' actual interactions with offspring and the spatial distancing between them. Collecting behavioral data on parent-offspring relationships and correlating them with the development of aversions is needed in the future.

#### *Acknowledgement*

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