Article

How Children Co-Construct a Religious Abstract Concept with Their Caregivers: Theological Models in Dialogue with Linguistic Semantics

Franziska E. Viertel 1,∗ and Oliver Reis 2

1 Department of German Studies and Comparative Literary Studies, Psycholinguistics, Paderborn University, 33098 Paderborn, Germany
2 Department of Catholic Theology, Paderborn University, 33098 Paderborn, Germany; oliver.reis@uni-paderborn.de
* Correspondence: franziska.viertel@uni-paderborn.de

Abstract: In acquiring a meaningful and rich religious language, children need to build up semantic knowledge about religious words. Most religious concepts do not refer directly to visible entities. Instead, their meanings are often abstract and emerge from the social observation of the world. In our pilot study, we investigate the acquisition of the religious word merciful in 7–8-year-olds during dialogic reading of a biblical story. Merciful is a prototypical religious concept and therefore a fruitful subject for research on the acquisition of religious concepts. First, following the perspective of religious education, we present theological models that identify relevant semantic aspects that constitute mercy. Two of these models relate to interpersonal behavior, which is most common in contemporary understanding. In a second step, we analyze which theological models of mercy are evoked in dialogic reading between caregivers and their children and how they are expressed linguistically. In a third step, we designed a picture story test that allowed us to investigate how children apply their knowledge to novel (secular) contexts and which theological models are evident in children’s problem solving. Our results show that two different theological models of mercy prevail during dialogic reading: the model of forgiveness and the model of compassion. Although the model of forgiveness is central in our settings, the language data show that the model of compassion is also present in the caregiver’s and children’s language. During dialogic reading, the frequency of the semantic aspects of the model of forgiveness expressed between child and caregiver is significantly related. In the picture story test, children are more likely to select semantic aspects of the model of forgiveness in religious contexts than in secular contexts. Interestingly, in secular contexts, children chose semantic neighbors more often, indicating a more diffuse understanding of merciful.

Keywords: religious words; abstract words; theological models; semantics; contextualization; social co-construction; language acquisition; religious language; religious education; psycholinguistics

1. Introduction

Religious classes are characterized by many new words that are abstract in nature. In religious education in primary schools, many children first encounter abstract religious words and learn their full meaning. This is partly due to the decline of religious upbringing in families (Hennecke 2015) but also to the fact that religious words often have a different semantic connotation in non-religious contexts (Kohlmeyer et al. 2020). Current research also points to children’s limited linguistic ability to form independent and meaningful statements with religious words (Altmeyer 2019; Fuchs-Auer 2015). It is often described that if children use religious language at all, it is only those with integrated traditional formulae (Altmeyer 2016; Fuchs-Auer 2015; Hennecke 2015). These deficits are often only described, but their mechanisms remain unexplored (Altmeyer 2016; Arens 2018; Riegel and Ziebertz 2008). This provides a productive starting point for our research. To
do so, it is necessary to take a step back and examine the acquisition process of religious abstract concepts itself, by systematically analyzing which aspects of a concept’s meaning are conveyed during learning and what role caregivers, but also the children themselves, play in this process. From the perspective of religious education, psycholinguistics offers the methodological possibility of tracing the acquisition of abstract religious concepts in two specific situations (interpersonal and intrapersonal) using empirical standards, thus going beyond individual surveys of children (e.g., Hennecke 2015; Kahrs 2008). For psycholinguistics, interpersonal and intrapersonal processes offer a new view of language learning that goes far beyond the social input of the caregiver that has been studied so far. The objective here is to decode the semantics of a concept using theological models and, on this basis, to identify semantically similar concepts (so-called semantic neighbors) that ultimately provide information about a child’s level of acquisition.

With our contribution, we present an interdisciplinary way to account for the complex and multidimensional meaning of an abstract religious word, more precisely the word merciful. Overall, our paper opens up an innovative methodological approach to studying the acquisition of religious concepts by integrating theological models and linguistic aspects of meaning. Our findings support theories of shared meaning construction of abstract religious concepts in discourse. Furthermore, we provide new insights into the context-dependency of religious concepts, which has important implications for learning mechanisms and pedagogical strategies for teaching.

2. Theoretical Background

2.1. Situating Religious Abstract Words

In research on abstract concepts, words are typically rated on a scale describing their degree of abstractness and concreteness among other semantic dimensions (cf. Villani et al. 2019). Most religious words, such as salvation or mercy, are rated as highly abstract and can be situated in a cluster of philosophical–spiritual concepts (ibid.). Although some religious words refer to practices (e.g., confirmation) or even concrete things (e.g., altar), a large number of them involve immaterial and transcendental concepts that are difficult to imagine (cf. Kambara et al. 2020; Viertel et al. 2022). Typically, religious words are unfamiliar to many people. This is particularly true for those who describe themselves as non-religious (Kambara et al. 2020). It is interesting to note that another psycholinguistic feature that stands out is an emotional component (namely emotional valence and emotional arousal) when religious words are presented—which tends to affect religious people more. Abstract religious concepts that occur frequently in religious education (e.g., blessing, sacrifice, faith) are emotionally anchored in young adults, either in terms of positive or negative valence (Langenkämper 2020; Võ et al. 2009). We will elaborate on this, along with other mechanisms for the acquisition of religious abstract concepts in the next section.

2.2. Acquisition of Religious Abstract Words

Religious concepts seem to be particularly difficult to acquire. This is because on the one hand, their meaning is usually abstract and not immediately accessible. On the other hand, the meaning of religious abstract words serves not only the individual but also a community. In the following, we will show that the acquisition of religious words is not an individual process but rather a co-construction in which dialogue or group discussions are of importance. Further, we will discuss mechanisms that might help to make the semantics of religious concepts easier to grasp.

2.2.1. The Importance of Social Co-Construction

According to Shea (2018), the semantics of abstract concepts are established interpersonally, which also assigns an essential role to negotiation of the meaning of a religious abstract word. This negotiation of conceptual meaning represents an innovation since conceptual acquisition in both disciplines is usually thought of in terms of the individual (intrapersonal). In the following, we are inspired by the Words As Social Tools (WAT)
approach, in which the acquisition of abstract concepts is rooted in language and sociality (Borghini et al. 2019) and then relate it to two different reading situations.

In a classical reading situation, where the parent reads the story, much emphasis is placed on the linguistic input (Hargrave and Sénéchal 2000), while social interaction plays a subordinate role. This means that children are linguistically challenged by the receptive input in terms of new words, their definition, or even a more demanding syntax. However, due to the asymmetry of social interaction, no joint construction of a concept is achieved. In contrast, in dialogic reading, where children are encouraged to ask questions and draw on their own experiences (Lever and Sénéchal 2011; Lonigan and Whitehurst 1998), children learn to deal with new words productively (Rohlfing et al. 2021). An example of this can be found in the training study by Grazzani and Ornaghi (2011), which aimed to promote the conceptual development of emotion words in preschool children. In this study, the authors compared two interventions in which subjects were (a) read short stories enriched with emotion words in a classical way by a caregiver; (b) were then encouraged to discuss the emotion concepts. The experimental group, who was able to use the new emotion words and discuss them with their peers, showed significant gains in emotion understanding compared to the group who had only heard the emotion words in the context of the stories. Two mechanisms seem to be at work here: On the one hand, the children were able to extract more meaning when they actively used the target word (cf. Carpendale and Lewis 2004). On the other hand, the discursive social exchange offers the children not only similar but also different nuances of a concept’s meaning. Beyond their individual perceptions, they also perceive other perspectives that lead them to reflect on other ways of using the word and to further differentiate their understanding of the word. This method has already been used to promote understanding of emotion words in two-year-olds (Grazzani et al. 2016), which marks the beginning of abstract word acquisition (Vigliocco et al. 2014). Dialogic reading and discourse overtly stimulate children to think about invisible abstract concepts. We will continue by addressing how the acquisition of religious abstract words can be supported linguistically.

2.2.2. Linguistic Mechanisms

From a psycholinguistic perspective, systematic studies on the acquisition of abstract religious words are very sparse. However, Viertel et al. (2022) suggested that the acquisition of religious concepts resembles that of abstract concepts in general, as both are subject to analogous acquisition conditions, i.e., they require a so-called linguistic emotionalization together with a competent conversational partner. For example, in their pilot study that used the same sample as this one, caregiver and child talked about a biblical story and the concept merciful. Herein, Viertel et al. (2022) analyzed whether relevant semantic aspects that constitute this prototypical religious word were emotionally enriched by both interactants. The results pointed in the direction that learning of abstract religious words is facilitated by a significant use of linguistic means of both interactants that have an emotionalizing effect (ib.). This enrichment of meaning seems to be necessary for an initial construction of the semantics, as for young language learners who lack the linguistic diversity of written contexts the meaning might hardly emerge from purely linguistic information (Vigliocco et al. 2018). Following Kousta et al. (2011), as well as Barsalou and Wiemer-Hastings (2005), the authors argue that emotionalization is important for acquiring a religious concept, because it “... help[s] to anchor the novel meaning more strongly with internal and somatic states ... and to bind them to linguistic representations” (Viertel et al. 2022, p. 2).

However, the authors reason that emotionalization needs to be accompanied by processes that activate a perspectivation in learners (ibid.). On the one hand, through perspectivation, semantically important aspects of a concept can be illustrated and made experiential, which may be particularly important for the initial understanding of very abstract religious concepts. On the other hand, perspectivation might guide the focus inwards in the sense of a metacognitive process so that learners are stimulated to think about a new abstract concept (Shea 2018). Viertel et al. (2022) found that a common enrichment
of semantic aspects through emotionalization and perspectivation often occurred in the dialogue between the child and the caregiver and, at the same time, was positively related to the same enrichment of the child’s understanding of the concept of *merciful*.

Of further interest is whether there is a positive relation between the child and the caregiver on semantic aspects in general, independent of any mutual linguistic enrichment. That is, in what follows we address the question of whether the type of semantic aspects is jointly co-constructed in relation to theological models.

2.3. Theological Models for Researching Semantic Development

Presenting a concept in different contexts is important for all types of words in order to acquire a consolidated conceptual representation, but it seems to be even more significant for abstract words, as only this ensures diverse connections between words (Mani and Borovsky 2018). The situational systematicity approach also attributes a crucial role to multiple contexts in the construction of meaning of abstract concepts, whose elements must be related to each other across multiple situations (Barsalou 1999; Davis et al. 2020). Therefore, for the construction and differentiation of an abstract concept it is fundamental to expose children to its semantics in different heterogeneous contexts.

Applied to a religious concept, such as that of *mercy*, it requires the exposure of different contexts of meaning in order to present the concept in its full complexity of meaning. In the following, we will situate the concept of mercy religiously and historically. On this basis, we will open up different contextual meanings of the concept by means of theological models in which semantic aspects are interwoven. Finally, we concretize two prototypical contexts of use, each of which activates different nuances of meaning (Büttner and Reis 2020). These can be revealed step by step in their semantic depth structure (in the following: semantic aspects).

The concept of mercy has developed its meaning over many centuries in different contexts of action. From a diachronic perspective, three phases can be distinguished: Before Christianity became a state church with the Constantinian turn in the 4th century, mercy structured Christian interaction as selfless devotion to people in need and a radical willingness to forgive. Christians testify to the merciful God who is clearly different from the ancient world of gods in both of these unusual behaviors (Kasper 2017; Kowalski 2010; Salmann 1994; Söding 2017; von Stosch 2014). God’s mercy is unfolded theologically once in the context of creation, when God gives life out of mercy (model 1), and salvation, historically when God turns out of mercy to the fallen people of Israel (model 2). After the Constantinian turn, Christianity was able to secure mercy structurally through institutions, e.g., for the care of the poor and the sick (Krafft 2017). The giving of charity was also a witness to the transforming power of God. Since the Council of Trent in the 16th century, the Church has continued to legalize its acts of mercy. Mercy became important so that justice would not be directed against people (Proft 2016). Mercy towards the people in need is therefore a principle of canon law itself, so that even legally punishable misconduct is covered by the willingness to forgive (Graulich 2017). Thus, in these three contexts of the question of God, i.e., the interpersonal and the canonical/institutional relationship, structures of meaning have emerged that we describe as models (following Büttner and Reis 2020) in which the historical–systematic positions are sharpened to the different interaction structures and are grasped in relation to each other. The diachronic perspective is thus synchronically dissolved. The models of mercy ultimately continue to shape the term in its full complex multi-perspectival meaning to this day (see Table 1).
From today’s viewpoint, the institutional and canonical context is certainly still preserved from this multi-perspectivity, but it is not linked to this concept, even for Christians. The 5th and 6th models therefore fail in everyday life. Since the context of the question about God per se is hardly relevant for everyday life, also in view of the general evaporation of God (Mette 2009), the first and second models recede into the background, and a central context for interpersonal behavior also changes: Because God is merciful, man should also be merciful. Whether it is by turning to people in need (model 3; Augustin 2017; Borgman 2017) or by forgiving them and lifting them up in their guilt (model 4). From the Christian point of view, this context has conceptually unified mercy as a religious concept in relation to other concepts, such as compassion, justice, love, and devotion, which now compensate for the action structure of mercy with greater diffuseness without the religious anchor. These changes in the use of the concept of mercy go unnoticed, but do not remain without consequences (Kohlmeier et al. 2020). If, for example, the term compassion is used as a goal in religious education, this would classically be the field of mercy. In this context, Baert-Knoll and Domsel (2021), in a study of the impact of the Compassion Program, not only fail to find religious references among young people, but also find that discussions of the concept of compassion do not trigger impulses to act to improve the situation of others. In the concept of compassion, these two discrepancies between model 3 and model 4 mentioned above would not be possible. Under these circumstances, a culturally conditioned and socially supported acquisition of the concept of mercy/compassion can only be expected to a limited extent. Nevertheless, this term, which is so central to the Christian worldview, offers semantic associations whose acquisition can be supported: for example, in a dialogic reading situation with linguistic means of emotionalization and perspectivation (Viertel et al. 2022).

In the following, we will focus on those models of mercy that are rooted in interpersonal behavior and are therefore most accessible to people today, despite the limitations described above.

For example, the story of Jonah can be read as an exemplary story of model 4 of forgiveness (emerging from model 2), which reveals semantic aspects in its plot structure (sin of Nineveh, refusal of Jonah to go there, merciful rescue from deserved death, repentance of Nineveh, proclamation of sin, repentance and conversion of Nineveh, merciful rescue from destruction). Jonah’s response to God’s mercy, however, is incongruous and hard-hearted and is intended to evoke in the reader the opposite impulse, that of his own mercy being exercised by God’s mercy. This narrative is therefore particularly suited to the religious structure of mercy and, with its emphasis on model 4, is likely to be challenging for everyday understanding (cf. Table 2).

### Table 1. Theological models of mercy and their underlying context.

<table>
<thead>
<tr>
<th>Models</th>
<th>Context</th>
<th>Interpersonal behavior</th>
<th>Institutional behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. God’s mercy gives life.</td>
<td>1. God’s economy of salvation</td>
<td>(As merciful God) a merciful person is touched by the troubles of another person.</td>
<td>5. A merciful jurisdiction considers the situation of the people.</td>
</tr>
<tr>
<td>2. The merciful God saves from (self-inflicted) misery.</td>
<td>2. The merciful God saves from (self-inflicted) misery.</td>
<td>(As merciful God) a merciful person forgives the guilty ones who are now in trouble.</td>
<td>6. Mercy is a permanent structural mission.</td>
</tr>
<tr>
<td>3.</td>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>4.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the Christian point of view, this context has conceptually unified mercy as a religious concept in relation to other concepts, such as compassion, justice, love, and devotion, which now compensate for the action structure of mercy with greater diffuseness without the religious anchor. These changes in the use of the concept of mercy go unnoticed, but do not remain without consequences (Kohlmeier et al. 2020). If, for example, the term compassion is used as a goal in religious education, this would classically be the field of mercy. In this context, Baert-Knoll and Domsel (2021), in a study of the impact of the Compassion Program, not only fail to find religious references among young people, but also find that discussions of the concept of compassion do not trigger impulses to act to improve the situation of others. In the concept of compassion, these two discrepancies between model 3 and model 4 mentioned above would not be possible. Under these circumstances, a culturally conditioned and socially supported acquisition of the concept of mercy/compassion can only be expected to a limited extent. Nevertheless, this term, which is so central to the Christian worldview, offers semantic associations whose acquisition can be supported: for example, in a dialogic reading situation with linguistic means of emotionalization and perspectivation (Viertel et al. 2022).

In the following, we will focus on those models of mercy that are rooted in interpersonal behavior and are therefore most accessible to people today, despite the limitations described above.

For example, the story of Jonah can be read as an exemplary story of model 4 of forgiveness (emerging from model 2), which reveals semantic aspects in its plot structure (sin of Nineveh, refusal of Jonah to go there, merciful rescue from deserved death, repentance of Nineveh, proclamation of sin, repentance and conversion of Nineveh, merciful rescue from destruction). Jonah’s response to God’s mercy, however, is incongruous and hard-hearted and is intended to evoke in the reader the opposite impulse, that of his own mercy being exercised by God’s mercy. This narrative is therefore particularly suited to the religious structure of mercy and, with its emphasis on model 4, is likely to be challenging for everyday understanding (cf. Table 2).
Table 2. Theological models of mercy in the context of interpersonal behavior with their action structure and related semantic aspects.

<table>
<thead>
<tr>
<th>Model 3: Compassion</th>
<th>Model 4: Forgiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Person A has troubles.</td>
<td>1. Person A is guilty to a person/God.</td>
</tr>
<tr>
<td>2. Person B is touched by the troubles of person A.</td>
<td>2. Person B/God has a legal claim against person A with corresponding sanctions or compensation.</td>
</tr>
<tr>
<td>3. Person B decided to help person A spontaneously.</td>
<td>3. Person A shows remorse and willingness to accept the sanctions or compensation.</td>
</tr>
<tr>
<td>4. Person A is free from troubles, or the troubles are fewer.</td>
<td>4. Person B/God renounces the sanctions or compensations.</td>
</tr>
<tr>
<td>5. Person B expects nothing in return from person A.</td>
<td>5. Person B/God transforms the situation into a healing one for both.</td>
</tr>
</tbody>
</table>

Accordingly, the structure of the action is characterized by the insistence on reparation after the norm violation, as in the case of the semantic neighbor *justice*. However, reparation is not renounced either, as in the case of the semantic neighbor *kindness*. This would make the violation, and therefore the norm, either the absolute norm (*justice*) or completely devalued (*kindness*). In this context, mercy upholds the norm, but repentance changes the semantics since it brings persons A and B back into a common position, making forgiveness the logical consequence. No forgiveness is reflected in the antonym of *hard-heartedness*.

Model 3 of compassion corresponds most closely to the everyday understanding of mercy, in which the guilt context plays no role in the action structure and the corresponding semantic aspects (cf. Table 2). On the basis of this model 3, the semantic neighbor of *justice* moves closer to the antonym *hard-heartedness*, and *kindness* itself becomes an almost synonymous term for *mercy* in the sense of a closer semantic neighbor.

### 2.4. Our Study

The use of these two theological models in acquiring the concept of mercy is the focus of our study. In two settings, model 4 of forgiveness serves as a central motif. In the first setting, the caregiver and the child read the story of Jonah and talk about the new concept. In the second setting, we study how children cope with novel (secular and religious) contexts and apply their knowledge, both receptively and productively, which stands for a solid acquisition of words. For this purpose, children are given a series of picture stories that always follow model 4. Here, they are asked which picture best represents *mercy* and then asked about the reasons for their choice. In that process, the children are also presented with semantic neighbors in order to map a possible vagueness of their conceptual understanding.

The dominance of model 4 in our study design allows us to uncover influences and traces of model 3, both in the dialogue between the children and their caregivers and in the children’s explanations during the picture story test. In this context, we can also identify conceptual ambiguities. An example of this is when children choose semantic neighbors instead of the target word *mercy*, which in turn are more strongly associated with one of the specific models. It also allows us to highlight which semantic aspects are at the core of each model and mutually constructed.

### Central Research Questions and Hypotheses

Does the empirical language data in the two settings reflect a conceptual understanding that follows a clear (predominant) model of mercy (model 4) or a mixed model (model 4 and model 3)?

Which semantic core elements across models exist that are expressed most frequently by the interactants in their explanations?
Due to a conceptual convergence in contemporary understanding to the model of compassion 3 (and despite the dominance of the model of forgiveness (4) in the dialogic reading situation and the picture test), children are not expected to have an explicit understanding of mercy that corresponds only to a model or coherent model references. That is, we assume semantic aspects of model 4 are interspersed with those of model 3 rather than a clear unidimensional model 4, in both settings.

In the picture test, we expect children to produce semantic aspects of model 3 and model 4 in their explanations in a relatively balanced way across contexts (rather than a mere predominance of model 4). In terms of context, however, we hypothesize that children will describe the concept more precisely by using more semantic aspects of model 4 in religious than in secular contexts. On the other hand, in their choice of semantic neighbors, we expect them to choose kind more frequently than just, with the former being a closer semantic neighbor to merciful in everyday language and in model 3 (especially in religious contexts).

In the dialogic reading situation, we expect the semantic aspects per model (3 or 4) being produced jointly by child and caregiver (positive correlation). Across situations, we expect children to pick up these semantic aspects per model from the dialogic reading in the picture test that will be evident in a positive relation between the two settings.

In an explorative analysis, we aim to identify core semantic aspects per model which can be found repeatedly in the caregivers’ and children’s explanations.

3. Method

3.1. Participants and Study Design

Our sample consisted of eight 7 to 8 year-old children (five of them female) and their caregivers. They all came from north-western Germany. Participants were recruited through teachers of religious education in primary schools. For data collection, six of the families visited our laboratory (SprachSpielLabor) and two families participated in the study via Zoom Video Communications, Inc. due to COVID-19 pandemic contact restrictions. Prior to participating, the parents gave their written consent following the University’s ethics procedures. In addition, participants were asked to familiarize themselves with the Jonah story in a children’s Bible (Scheffler and Gotzen-Beek 2014), which was sent to them prior to data collection.

Our study design included three settings, all recorded with video cameras (in our laboratory) or webcams using Zoom software (at home):

(A) A dialogic reading situation between child and parent took place without the presence of the experimenter. It is important to note that the parent and the child were free to choose how to realize the reading situation (Jonah story). It was briefly mentioned beforehand that the word mercy/merciful was to be thematized.

(B) This was followed by a picture story test to assess the children’s understanding and explanation of the concept of mercy on the basis of a series of picture cards. After a short warm-up in which the experimenter briefly asked the child about the content of the Jonah story, the picture story test began by being pragmatically framed as the experimenter’s need for the child’s opinion about the pictures. Unlike typical comprehension tests (which mainly focus on non-verbal selection of one of four pictures), the nature of the pragmatic frame (cf. Rohlfing et al. 2016) encouraged the children to express themselves freely about the pictures by giving them the role of experts.

Abstract concepts seem to be difficult or impossible to picture, as argued by researchers (Lupyan and Winter 2018, p. 3). With our picture story test, we challenge this claim by constructing typical psycholinguistic semantic stimuli that are anchored in specific situations so that they are understandable in the contexts themselves (cf. Davis et al. 2020), which follows a very pragmatic perspective. For our pilot study, we created five picture stories situated in different contexts: two religious (Citizens of the city of Nineveh and The tax collector Zacchaeus), two secular stories (within the contexts of home and school), and a semantically independent set in order to familiarize the children with the test itself.
In these contexts, the basic framework always follows our model 4 of forgiveness, i.e., the action structure and semantic aspects remain unchanged at a deeper, abstract level (the underlying depth structure with its semantic aspects). However, on the surface, the semantic aspects are realized differently depending on the situation. For example, each story began with an opening image depicting a person burdened with guilt in different ways, corresponding to the first semantic aspect of our model 4. In one of our secular stories, a girl tries to reach into the cookie jar (which is forbidden) and in the process she breaks an expensive vase. In one of our religious stories, the rich tax collector Zacchaeus demands a lot of money to enter the city, even a whole bag of money from one man. The pictures themselves contained the key semantic elements but were enriched by a few sentences from the experimenter, underlining the need for abstract concepts to be linguistically constructed (cf. Wauters et al. 2003).

Then, the children were presented with four alternative endings in pictures, accompanied by speech, before being asked which of the pictures best represented the target word *merciful* and to briefly explain their choice. In the target item, the other semantic aspects of model 4 were integrated, which culminated in the act of forgiveness. The other three alternative endings illustrated semantic neighbors that followed a psycholinguistic conceptualization consisting of semantically close and distant concepts, as described in Section 2.3: *just* and *kind* (both semantically close neighbors) and hard-hearted (semantically distant neighbor = antonym). In one context (religious and secular), each child was asked once for the target word and in the other cases for the semantic neighbor *just*, so that the children could not be biased by a question pattern. All sequence presentations were completely randomized.

(C) Parallel to the picture story test, parents were interviewed about their understanding of the word and how they practiced mercy in the family.

In our analysis, however, we will concentrate on settings A and B.

### 3.2. Data Coding

Using the linguistic annotation software ELAN (Sloetjes and Wittenburg 2008), all videos were transcribed and coded.

#### 3.2.1. Choice of Semantic Neighbors

To assess how children applied the new abstract word to novel contexts, we analyzed the children’s nonverbal answers, i.e., whether they chose the target item or a semantic neighbor in response to the test question. With this, we could identify a conceptual ambiguity or influences of model 3.

#### 3.2.2. Semantic Aspects per Model

During coding, we concentrated on the semantic aspects produced in setting A (dialogic reading by both interactants) and in setting B (picture story test). In situation A, coding included the dialogue between the child and the caregiver about the story and the concept of mercy but excluded the reading of the story itself. In setting B, coding began after the test question for *merciful* was posed and focused on the child’s explanations for her choice (e.g., “Why do you think the teacher in this picture is merciful?”). Even when children had chosen a close semantic neighbor instead of the target item (see Section 3.2.1), we analyzed the children’s explanations in terms of model type and semantic aspect. Often, the choice of the semantic neighbor (e.g., *kind*) already gave a clue as to which model the child had retrieved.

In the analysis, we drew on our two models of mercy (see Table 2) and classified the children’s and caregivers’ utterances to the corresponding semantic aspects per model, i.e., we counted how often each semantic aspect of each model was uttered. For example, in the picture story test, a child said about the inhabitants of the city of Nineveh: “Because they haven’t done anything good”, which corresponds to the first semantic aspect of model 4 in which a person is being guilty (cf. Table 2). On the other hand, the same child commented...
during dialogic reading about Saint Martin: “He gave a poor man a piece of his coat” that matches the third semantic aspect of model 3. In the picture story test, we also distinguished the contexts (religious vs. secular) in which semantic aspects were named.

The relative frequency per model was calculated to determine the frequency of all semantic aspects of one model compared to the other. To determine the frequency of each semantic aspect, we used the number of total occurrences in each setting.

4. Results

In the first part of our data analysis (Section 4.1), we focus on comparing the models by setting (dialogic reading and picture story test), type of interactant (child and caregiver), and context (religious and secular). In order to detect a possible dominance of one model, we apply non-parametric tests comparing all semantic aspects of model 3 with those of model 4. To find positive relations between settings or individuals, we chose a correlation coefficient (Kendall’s tau) that is suitable for a small number of observations as well as tied ranks and more accurate than Spearman’s correlation coefficient (Field et al. 2012). The choice of non-parametric tests results from the small sample size and the predominantly non-normally distributed data. We were guided by the minimum sample size for the use of non-parametric tests given by Dwivedi et al. (2017). Smith and Little (2018) also argue for the high power of small sample designs in the context of a strong theoretical background and a well-designed method.

In the second part of our exploratory data analysis (Section 4.2), we present the data graphically by using box-whisker plots (so-called boxplots) to identify core semantic elements. This method provides a good overview of the distribution and center of a dataset, as well as any outliers (Field et al. 2012).

4.1. Comparison of Theological Models

First, in our descriptive statistics, we report the relative frequencies with which all semantic aspects of the theological models 3 and 4 appeared in the productive speech of the subjects in the two settings (cf. Table 3). As expected, in addition to model 4 of forgiveness, we identified semantic aspects related to model 3 of compassion in all settings. However, during dialogic reading (A), almost all children (except for one) only mentioned semantic aspects of the model of forgiveness (4) which was the dominant model in the Jonah story. Conversely, only one parent did not refer to model 3 during dialogic reading, which means that the caregivers’ explanations mainly involved two contexts (models). Interestingly, in the picture story test (B), half of the children in our sample also referred to model 3, even though the picture stories were based on model 4 as well.

Table 3. Relative frequencies of both theological models in comparison per setting and type of interactant.

<table>
<thead>
<tr>
<th>Setting Subject (N = 8)</th>
<th>Model 3 (Compassion)</th>
<th>Model 4 (Forgiveness)</th>
<th>Test of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Dialogic reading)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>caregiver</td>
<td>Mdn = 0.10</td>
<td>Mdn = 0.89</td>
<td>V = 26</td>
</tr>
<tr>
<td></td>
<td>range = 0–0.75</td>
<td>range = 0–0.96</td>
<td>P = 0.03 *</td>
</tr>
<tr>
<td></td>
<td>IQR = 0.12</td>
<td>IQR = 0.38</td>
<td>r = −0.56</td>
</tr>
<tr>
<td>A (Dialogic reading)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>child</td>
<td>Mdn = 0</td>
<td>Mdn = 1.0</td>
<td>V = 20</td>
</tr>
<tr>
<td></td>
<td>range = 0–0.85</td>
<td>range = 0–1.0</td>
<td>P = 0.02 *</td>
</tr>
<tr>
<td></td>
<td>IQR = 0</td>
<td>IQR = 0.88</td>
<td>r = −0.57</td>
</tr>
<tr>
<td>B (Picture story test)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>child</td>
<td>Mdn = 0.13</td>
<td>Mdn = 0.75</td>
<td>V = 16.5</td>
</tr>
<tr>
<td></td>
<td>range = 0–1.0</td>
<td>range = 0–1.0</td>
<td>P = 0.12</td>
</tr>
<tr>
<td></td>
<td>IQR = 0.31</td>
<td>IQR = 0.63</td>
<td>r = −0.39</td>
</tr>
</tbody>
</table>

*Note. Mdn = Median; range = minimum score to maximum score; IQR = interquartile range; V = test value; * P < 0.05; r = effect size.

Second, we compared the relative frequencies of the theological models against each other in order to determine whether the semantic aspects of model 4 dominated those of
model 3. Therefore, we compared the scores per setting and type of interactant by using the non-parametric Wilcoxon signed-rank test (see Table 3). Contrary to our hypothesis, in setting A, both caregivers and children referred significantly more often to the semantic aspects of the model of forgiveness (4). However, in setting B, in line with our hypothesis, we did not detect a dominance of model 4 over model 3, i.e., the children mentioned the semantic aspects of both models equally often in both contexts. This was also reflected in their choice of distractors, as children tended to choose *kind* (*Mdn* = 1, *range* = 0–2, *IQR* = 0.25) as often as *just* (*Mdn* = 0, *range* = 0–1, *IQR* = 1), *V* = 21, *P* = 0.12, *r* = −0.39.

### 4.1.2. Interindividual and Cross-Situational Relations between Semantic Aspects

Next, we tested whether the production of semantic aspects per model was positively related between child and caregiver in the reading situation. Again, owing to the small data set and other constraints, we used a nonparametric correlation coefficient for our calculation (Kendall’s tau). We found a marginal positive correlation between caregiver’s and children’s use of semantic aspects of model 4 (*τ* = 0.56, *P* = 0.08), i.e., the more a caregiver produced semantic aspects of the model of forgiveness, the more the child did so, and vice versa. For model 3 of compassion, no positive correlation could be detected (*τ* = 0.15, *P* = 0.66).

Across situations, we expected children to pick up these semantic aspects per model from the dialogic reading in the picture test. We did not find a positive relation between the children’s utterances across situations (model 3: *τ* = 0.16, *P* = 0.64; model 4: *τ* = 0.05, *P* = 0.88), nor between the caregivers’ utterances in the reading situation and those of the children in the test situation (model 3: *τ* = 0.08, *P* = 0.78; model 4: *τ* = 0.16, *P* = 0.60).

### 4.2. Explorative Graphical Analysis of Core Semantic Aspects

Finally, in an exploratory analysis, we aim to identify core semantic aspects per model and setting which can be found in the participants’ productive language. For this purpose, we present the data graphically, using box-whisker diagrams to display the median occurrence of a semantic aspect per model, interactant, and setting. A single dot in each figure represents an outlier.

Figure 1 displays the semantic aspects of the model 4 of forgiveness during the dialogic reading. Here, the caregivers most often refer to the aspect of a person being...
guilty (aspect 1), which is almost omitted by the children. Another important aspect for the caregivers to mention seems to be that the guilty person shows remorse and willingness to accept sanctions (aspect 3), which is also present in the children’s speech. Some children and caregivers also mentioned that God renounces the sanctions (aspect 4). Both caregivers and children very rarely made references to aspect 2 (person B/God has a legal claim against person A with corresponding sanctions) and aspect 5 (a person/God transforms the situation into a healing one for both). In Section 4, we will discuss these varying degrees of focus on different semantic aspects between the caregiver and the child.

Figure 1. Semantic aspects of model 4 produced by caregivers and children in setting A (dialogic reading).

Figure 2 shows the semantic aspects of model 3 of compassion during the dialogic reading. This graph illustrates that for most of the children the aspects of model 3 were not present in this particular setting. The distribution of the semantic aspects for the parents is similar, although not quite as low as for the children. Only aspect 2 (one person is touched by another’s troubles) is addressed by some caregivers. In the discussion, we will mainly focus on the overall very low semantic aspects of model 3.
not present in this particular setting. The distribution of the semantic aspects for the parents is similar, although not quite as low as for the children. Only aspect 2 (one person is touched by another’s troubles) is addressed by some caregivers. In the discussion, we will mainly focus on the overall very low semantic aspects of model 3.

Figure 2. Semantic aspects of model 3 produced by caregivers and children in setting A (dialogic reading).

Figure 3 plots the semantic aspects of both models during the picture story test. When we look at model 3 of compassion, we see a similar pattern as described above. Only semantic aspect 5 (that one person expects nothing in return from another) is mentioned by a few participants. Interestingly, when referring to model 4 of forgiveness, the children most often pointed to semantic aspect 5 (a person/God transforms the situation into a healing one for both), which had not appeared in their language during the dialogic reading. Occasional reference is made to semantic aspect 4 (God renounces sanctions), and hardly any reference is made to semantic aspect 3 (guilty person shows remorse and willingness to accept sanctions), while semantic aspects 1 and 2 are not addressed at all by the children in the picture test. We will elaborate on this distribution in our discussion by providing particularly pragmatic explanations.
Figure 3. Type of semantic aspects produced by the children in setting B (picture story test).

All calculations and graphs reported here were performed using R (R Core Team 2021).

5. Discussion

In our pilot study, we investigated the acquisition of an abstract religious word in primary school children who co-constructed the meaning of the word *merciful* together with their parents in a natural learning situation, i.e., in dialogic reading, and were subsequently tested on their conceptual understanding in novel and different contexts (picture story test). In contrast to our study on the type of input and linguistic enrichment for meaning construction (cf. Viertel et al. 2022), in the present study we focused on which theological models with their corresponding semantic aspects were elicited by the interactants. The semantic aspects are at the core of the concept, i.e., if one aspect is omitted or altered the concept also changes. Theologically and historically, we identified only two models of mercy that are still available for everyday understanding. We then based our two settings (dialogic reading and the picture story test) on a model in which mercy is semantically classified as a reconciliatory act of forgiveness. Due to the dominance of this model 4, we were able to perceive a broader (or more diffuse) understanding of the word in the productive utterances of the participants, including another model of compassion (3). In addition, depending on the setting and the interactant, we identified different frequencies in the mentioning of semantic aspects.

First, we discuss the differently weighted relative frequencies of model 3 compared to model 4 per interactant and setting with side notes on the type of semantic aspects.
To our surprise, the children almost never mentioned semantic aspects of model 3 during dialogic reading, which leads us to conclude that they had a relatively unidimensional conceptual understanding at this point. However, we will limit our conclusion based on the following arguments: From a pragmatic point of view, during the process of co-construction, the children mainly talked about the story, in many cases partially retelling the Jonah story by integrating semantic aspects belonging to model 4. This means that the children hardly moved beyond model 4 because of their strong adherence to the biblical story itself. They were partly able to change the context by establishing a secular self-reference through a personal example (in the sense of a perspectivation, cf. Viertel et al. 2022), but they did not manage to extend the concept by transferring it to a person in need rather than to a person who is guilty. It may be that this strong focus on model 4 is closely related to the fact that the concept of mercy was simply new to all the children in our study and that our study design did not involve model 3 resulting in the children to strongly rely on what the Jonah story provided. From the data, we deduce that at this early stage of conceptual development it might be helpful to focus on a clearly defined model, as a broader focus that automatically integrates more diverse semantic aspects might hinder early conceptual understanding. At a later stage, with a basic knowledge of the word, it may be crucial to expose children to different contexts and models in order to differentiate and deepen the concept (Mani and Borovsky 2018).

In contrast, in the reading situation, the parents provided the children with a richer and broader concept by referring to both models and more diverse semantic aspects. By integrating model 3, they opened up a new (mostly everyday) context in which the guilt aspect of the initial situation receded into the background. On the one hand, this can be seen in the fact that the caregivers emphasized that person B was affected by someone else’s problems. On the other hand, the caregivers contrastively marked core aspects of model 4 by frequently emphasizing semantic aspects 1 and 3, which focuses on the guilty person A who later shows remorse and is willing to accept the sanctions.

The children, in turn, only partially addressed the guilt aspect in the reading situation: although they referred to person A’s remorse and willingness to accept the sanctions, the children also focused on person B’s renunciation of the sanctions, which is the core of mercy in model 4. Here we would like to build on the fact that children and caregivers were positively related to each other in conceptual construction in terms of the quantity of semantic aspects in model 4. These data also provide a good illustration that both interactants contributed equally to the construction of conceptual knowledge about mercy and that it did not depend solely on the input of the caregiver. That is, the children also made their contribution by linking to their own life world, tying in with a subsequent aspect, or setting a different focus than the adults when naming the semantic aspect of model 4.

In the picture story test, the picture was not as clear as in the reading situation. Although the picture stories were new situations (based on model 4) to which merciful had to be applied, the children in the test situation also used semantic aspects of model 3 in their explanations. Numerically, the semantic aspects of model 4 were mentioned more often than that of model 3, but this difference did not reach statistical significance. We assume that the availability of semantic neighbors in picture selection plays a key role in this respect and might have elicited the reference to model 3. For example, the neighbor kind overlaps strongly with model 3; it is even used synonymously in everyday language. Being confronted with these semantically very close concepts and receptively choosing a semantic neighbor such as kind may have triggered an emotional impulse and contributed to the activation of model 3.

When analyzed by context, as expected, model 4 tended to dominate in religious contexts, whereas model 3 was used equally in both contexts. First, it seems likely that the learning situation in the religious context of a biblical narrative contributed to the fact that the semantic aspects of model 4 were also more likely to be selected in religious contexts in the subsequent test. Second, in religious contexts, a particular practice seems
to emerge more strongly, culminating in forgiveness, when mere compassion would not be appropriate. However, some children explicitly opted for the close semantic neighbor *kind*, while none chose *just*. It is noticeable that compassion as well as forgiveness are missing in the semantic neighbor *just*, while compassion is at least present in the case of *kind*. In secular contexts, by contrast, there was much more variation in what actions were acceptable, resulting in a tendency to choose more semantic neighbors or a model that does not include the semantic aspect of forgiveness—even when merciful actions are explicitly asked for in the test question.

The types of semantic aspects that children produced in the picture story test differed from those produced in the dialogue reading, i.e., children highlighted person B's actions rather than person A's (aspects 4 and 5 of model 4) and omitted that someone was guilty in the beginning. In our view, the motivation for this focus lies in the test situation and the associated test question, which aims at person B's behavior and does not ask for earlier events. So the reason is purely pragmatic because why should children explain that someone was guilty?

5.1. Conclusions

In order to build a broad and deep conceptual knowledge, it seems necessary for children to be confronted with a variety of models in the acquisition process since each model evokes different contexts of meaning and, thus, triggers different associations of meaning. A too narrow (or homogeneous) context in the acquisition of a religious abstract concept, for example, prevents children from transferring and independently extending their conceptual knowledge to other, non-religious contexts; this must also be considered in the acquisition of concepts in religious education.

In the empirical study of the models, we were also able to show that in a dialogic reading situation between parent and child, relevant semantic aspects from the theological models were not only reflected in the language of the parents but were also used by the children so that the religious concept of mercy was co-constructed (cf. Carpendale and Lewis 2004; Shea 2018). These results may be promising for school practice because in class a teacher could introduce the concept of mercy with its core semantic aspects of one model which students will then draw on. In this process, they may formulate different semantic aspects that belong to another model of mercy, representing another perspective on the concept. However, in group discussions with their peers, students will be confronted with even more semantic nuances of the concept. In particular, peer contributions to conversations, as well as discussions among peers, are cognitively processed in a beneficial way because they are structurally more symmetrical (or equal) interactions than discourses with an adult. In this context, Blum-Kulka and Snow (2004) emphasize the opportunity for children to contribute as experts rather than in the role of novices, which allows them to express their ideas more freely and more importantly to actively shape the linguistic knowledge of the whole group. At the same time, children may evaluate peer contributions differently from adults, i.e., semantic aspects may be processed in a more perspectivized and emotionalized way, which is considered advantageous in the acquisition of abstract religious words (cf. Viertel et al. 2022).

5.2. Limitations and Future Directions

Finally, the size of the sample, which allowed little manipulation of the study design, must be critically considered. For a more systematic analysis of our theological models, a between-subjects design is needed in the future, allowing a proper comparison between models 3 and 4 by presenting each group with one model. Furthermore, it would be interesting to manipulate the secular versus religious contexts during the learning phase (dialogic reading) in order to systematically analyze how children manage to apply their conceptual knowledge from one context to another. Another vital question to be addressed in the future would be to link the parents’ knowledge of mercy (setting C) with their explanations and use of semantic aspects during dialogic reading.
Author Contributions: Conceptualization, F.E.V. and O.R.; methodology, F.E.V. and O.R.; software, F.E.V.; validation, F.E.V.; formal analysis, F.E.V.; investigation, F.E.V.; resources, F.E.V. and O.R.; data curation, F.E.V.; writing—original draft preparation, F.E.V. and O.R.; writing—review and editing, F.V and O.R.; visualization, F.E.V. and O.R.; supervision, F.E.V. and O.R.; project administration, F.E.V.; funding acquisition, O.R. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Committee of PADERBORN UNIVERSITY (project RABE, approved 8 October 2021).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to ongoing research.

Acknowledgments: We thank all the parents and children who participated in this pilot study. We thank Teresa Schöning for the artwork of the picture cards that we used in our picture story test and Theresa Kohlmeyer for her contribution to the study design. We would also like to thank Lina Kreutzkamp for her help in conducting the online study, and Alina Lenze for coding the data. Finally, we would like to thank Katharina Rohlfing for the valuable discussions and constant support in our project.

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

Notes

1 Semantic neighbors are representatives of a semantic category, i.e., they are taxonomically arranged under the same hypernym. Semantic neighbors have a large overlap of semantically identical features but at least one distinctive feature. A semantic proximity is easier to determine for concrete words than for abstract ones: For example, stool and chair are semantic neighbors. In psycholinguistics, especially in language comprehension tests, semantic neighbors are used to assess whether a person is able to distinguish a target word from semantically similar words, i.e., its distinctiveness.

2 Semantic aspects are the depth structure of a concept in terms of meanings that build on each other. While concrete words can be described using semantic features, such as a piece of furniture with four legs for sitting on, this is not possible for more complex abstract concepts. The concept of mercy, for example, is strongly linked to a fixed action structure, i.e., in order for someone to behave mercifully, another person must first have been guilty or in need (see Section 2.3). These latter initial conditions represent two semantic aspects that can be realized differently in the surface structure, e.g., someone has been guilty by intentionally hurting someone, or someone is hungry.

References


Lupyan, Gary, and Bodo Winter. 2018. Language is more abstract than you think, or, why aren’t languages more iconic? *Philosophical Transactions of the Royal Society B* 373: 1752. [CrossRef]


