Chapter 7
Where Gods Dwell? Part II: Embodied Cognition Approach and Children's Drawings of Gods

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Abstract Empirical demonstrations of the embodied and grounded cognition approach, involving diverse areas and phenomena, have increased exponentially in recent years. However, little research has been done in the religious domain. To the best of our knowledge, no study based on this theoretical framework has explored spatial dimension in pictorial representation of the divine in children's drawings or in religious art in general. The present study represents the very first attempt to investigate if and how spatiality is involved in the way children depict the divine in their drawings. Drawings collected from four groups of participants (n = 1156, ages 6–15) characterized by different cultural and religious environments: Japanese (Buddhism and Shinto), Russian-Buryat (Buddhism, Shamanism), Russian Slavic (Christian Orthodoxy), and French-speaking Swiss (Catholic and reformed Christianity) were annotated using the *Gauntlet* annotation tool and then analysed. The main result indicates that children from all four groups generally depict god (the centre of the annotated representation) in the upper part of their drawings. Further testing indicates that the type of composition (for instance, god depicted alone or as standing on the ground where the sky is also depicted) did not serve as a major influence on the child's placement of god.

Keywords Cross-cultural · Children's drawings · God representations · Spatiality · Embodied cognition · Conceptual metaphor theory

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In the last few decades, the embodied and grounded cognition approach has expanded considerably across many domains of scientific knowledge such as the cognitive sciences, psychology, philosophy, linguistics, cognitive anthropology, and robotics (Barsalou, 2010; Borghi & Pecher, 2011; Varela et al., 2017). The main idea of the embodied and grounded cognition approach is that the mind must be understood in the context of its relationship to a physical body that interacts with the world. This idea runs contrary to the classical cognitive paradigm, in which the mind has been viewed as an abstract information processor, whose connections to the outside world were of little theoretical importance (Wilson, 2002). The study of abstract concepts, which has posed a significant problem for traditional theories, received a significant attention in the frame of the embodied and grounded cognition approach (Barsalou, 2010; Borghi et al., 2017). The conceptual metaphor theory of Lakoff and Johnson (1980) is particularly useful to the current research on divine representations. This theory postulates that metaphors are not just a matter of language; it emphasizes the fact that human thought processes are largely metaphorical in nature. Metaphors constitute mental associations between basic source concepts derived from interactions with the physical and social world and target concepts that represent abstract referents. In their research, Lakoff and Johnson showed how hundreds of primary metaphors are inevitably acquired on the basis of bodily interactions with the physical environment. Metaphors also reveal the way people represent and think about abstract concepts. Metaphors facilitate understanding and reasoning with abstract concepts. According to Lakoff and Johnson, this is the chief role of metaphors. Empirical demonstrations of this approach, involving diverse areas and phenomena, have increased exponentially recent years but, unfortunately, little research has been done in the religious domain. In the present study, we will attempt to apply embodied cognition theory and the conceptual metaphor theory to children's drawings of god[1] in order to investigate if and how spatiality is involved in the way children depict the divine in their drawings.

The Embodied Cognition Approach and God Representation: A Literature Review

Researchers have studied extensively the link between spatial location (up/down) and a variety of different concepts. The results provide evidence for a link between the vertical dimension and the concepts associated with affect, size, power, social status, morality, wealth, and intellect (for a review on this topic, see Cian, 2017). For instance, studies have shown that people identify powerful-non-powerful groups faster when the groups are presented graphically in high-low vertical positions, respectively

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[1] Why the term *god* begins sometimes with an uppercase letter G, sometimes with a lowercase letter g, and why it appears sometimes in the singular and sometimes in the plural, is explained in the introductive chapter of this book (Chap. 1, this volume).

(Schubert, 2005). Powerful individuals were categorized more quickly when they were paired with mountains than when they were paired with level terrain (Gagnon et al., 2011). Powerful brands are preferred more frequently when the brand logo is depicted in a higher position in opposition to non-powerful logos (Sundar & Noseworthy, 2014). People in a position of upright posture generate and recall positive thoughts more easily than those in a position of drooping posture (Wilson & Peper, 2004). People recognize words with a moral meaning more quickly when they appear toward the top (as opposed to the bottom) of the screen (Meier et al., 2007b).

Two studies, from among those done on the topic, are of particular interest to our project. In the first one, Meier et al. (2007a) proved, in a series of six experiments, that cognitions related to the divine are embodied in nature and that representations of the divine (as opposed to the profane) borrow from the vertical domain of perception. For instance, the first of these experiments showed that participants categorize God-related words (Almighty, Creator, Deity, and Lord) faster when the words were paired with up-related words (high, top, above, and ascend). In the second experiment, Meier et al. found that participants categorized God-related words faster when these words were presented at the top (vs. bottom) of the screen. Their third experiment tested the participants' memory for spatial locations: participants were presented with God-like images, Devil-like images, and images of neutral objects unrelated to religion (e.g., a spoon). As researchers predicted, participants recalled the positions of the God images to be higher than they actually were and participants recalled the Devil images to be lower than they actually were, both relative to a neutral image (Meier et al., 2007a).

The other study of particular interest to us is the 2010 study by Chasteen, Burdzy, and Pratt. Their experimental design examined not only the associations between God-Devil and up-down related words but also the associations between these words and left-right. As predicted, participants detected targets that appeared in locations that were spatially compatible to the concepts of God and Devil. Specifically, participants detected targets faster in either the up or right-side locations when God-related words appeared first. In contrast, participants were faster to respond to the down or left-side locations when Devil-related words appeared first. Their study also revealed that the orientation of attention occurred regardless of the religiosity of the participants (Chasteen et al., 2010).

In sum, results of these two studies provide evidence that people's representations of the divine have strong spatial components and, more specifically, they closely associated with something located in an up (spatially) position. Our research moves further to explore the potential effect incurred by the activation of internal representations of the divine: How does the activated internal representation of the divine impact pictorial production? To the best of our knowledge, no study has explored this facet of pictorial representations of the divine, either in children's drawings or in religious art in general. Moreover, we did not find studies of pictorial art based on the embodied cognition theory that propose to explore the location of particular elements in pictorial space. This is true for research on children's drawings as whole. In this sense, our study represents the very first attempt to apply embodied cognition theory and conceptual metaphor theory to pictorial production.

Aims and Hypotheses

Following the grounded or embodied cognition approach and, especially the theory of conceptual metaphor as described by Lakoff and Johnson (1980), our main hypothesis was that children would demonstrate a tendency to place their god representations in the upper part of their drawings. Popular beliefs according to which divine beings dwell in the sky or heaven and the idea of gods as all-powerful beings are commonly found, even in diverse religious systems. Children acquire such representations passively and/or actively through a variety of socialization agents like families, religious institutions, and the mass media. Growing older, children would become more familiar with such representations and would consider god as a powerful figure located somewhere in the sky. Consequently, the tendency to place god representations in the upper part of the drawings should depend on children's age. Concerning other possible contributing variables (e.g., gender, type of schooling), no hypothesis was advanced due to the innovative and exploratory nature of our research and the lack of past empirical data in this area.

Data Sample

For the purpose of the present study we used a subset of the drawings collected in Japan, Russia, and Switzerland (n = 1156; age min = 6 years and 3 months, age max = 15 years and 11 months). Only the drawings that could be annotated were selected from this subset.[2] Drawings from Japan (n = 135) were collected in regular and Buddhist schools in four prefectures, namely Tokyo, Kyoto, Fukushima, and Chiba. Drawings from Russia (n = 511) were divided into two separate samples because of important cultural and religious differences between children from two different ethnic groups, Russian-Slavic and Russian-Buryat. The Russian-Buryat subsample (n = 219) of drawings was collected in regular schools in Ulan-Ude (Buryatia), where the majority of children declared themselves to be Buddhists. Regarding the Russian-Slavic subsample (n = 292), drawings were collected both in regular schools (Ulan-Ude and Saint Petersburg) and in Orthodox parishes (Saint Petersburg). Drawings from the French-speaking part of Switzerland (n = 510) were collected in regular schools and in Protestant and Catholic parishes. To study the age effect, all samples were divided into three age groups (7–9 years, 10–11 years, and 13–14 years old). For more detailed information about age groups (age, M and SD), see Table 7.1.

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[2] Neither drawings containing more than one god figure, nor blank sheets of paper (submitted by children as either a representation of god, or an indication of the impossibility of drawing god) could be annotated and these submissions were excluded from further analysis.

Table 7.1 Participants' socio-demographics

Samples	Age		Young age		Middle age		Older age		Child's gender		Context	
	M	SD	M	SD	M	SD	M	SD	Girls	Boys	Regular	Religious
Japanese (n = 135)	10.88	2.29	8.09	0.49	11.07	0.55	13.60	0.42	58 (42.96%)	77 (57.04%)	55 (40.74%)	80 (59.26%)
Russian-Buryat (n = 219)	10.97	2.69	7.81	0.64	11.22	0.71	13.90	1.04	113 (51.60%)	106 (48.40%)	219 (100%)	0 (0%)
Russian-Slavic (n = 292)	10.90	2.18	8.17	0.65	11.20	0.66	13.37	0.72	152 (52.05%)	140 (47.95%)	195 (66.78%)	97 (33.22%)
Swiss (n = 510)	10.99	2.41	8.18	0.73	10.92	0.83	13.71	0.79	266 (52.16%)	244 (47.84%)	223 (43.73%)	287 (56.27%)

Method

Drawing Task[3]

Researchers provided participants with paper (size A4), a graphite pencil, a set of wax pastels, and coloured pencils. The following instruction was used in all countries:

> Have you ever heard the word "god"? Close your eyes and try to imagine it. Now draw it. Do not look at your classmates, because I would like to know how you imagine it.

After completing this task, the participants were asked to describe their drawings and to answer a questionnaire about their religious environment. Researchers arranged to meet with small groups of participants (10–12); participants worked individually on the drawing task. Time for drawing was not limited and the full session lasted 40 min on average.

Annotation

Three trained annotators located god representations in drawings by the rectangular framing function within the *Gauntlet* annotation tool. For all of the samples, we achieved an excellent level of agreement between the annotators: ICC = 0.966 with 95% confident interval = 0.948–0.978 for the Swiss sample and ICC = 0.998 with 95% confident interval = 0.997–0.999 for all Russian samples. We calculated the ICC estimates and their 95% confident intervals using R (version 3.4.3) and the package irr (version 0.84) based on a single-rating, absolute-agreement, two-way model.

Statistical Analysis

We used one sample *t* test to verify if the means of god representations (the middle points of the annotated figures) were situated higher than the midline of the drawing (sheet of paper). Logistic regression analysis was used to check the influence of age, sex, schooling, paper format and type of composition on the location (up vs. down) of god representations (as a dependent variable). We also used Chi-square tests to analyse the distribution of drawings according to three parts of the sheet.

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[3] For more detail about the procedure see the introduction of the present volume (Chap. 1, this volume).

Results

Control of Drawing Orientation and Composition Type

Children were free to choose the orientation of their paper (landscape or portrait) while drawing. To be sure that this factor has no impact on the depiction of god representations, we assessed the homogeneity of variances using Levene's Test of Equality of Variances and ran an independent t-test on the data with a 95% confidence interval (CI) for the mean difference. Results indicate that there is no impact of paper orientation on the location of the god representations.

We also controlled for composition type in order to exclude any possible effect of the type of composition on the location of the god figure. Two judges assigned each drawing to one of two categories: (1) compositions consisting of one-dimensional space where there was either celestial or terrestrial background (but not both), or there was no drawn background at all (see examples, Fig. 7.1); (2) compositions representing two-dimensional space consisted of the sky and the earth (ground, water surface etc.) (see examples, Fig. 7.2). The level of agreement was either excellent or good: Japan (N = 135), Cohen's Kappa = 1; Russian-Buryat (N = 219), Cohen's Kappa = .906; Russian Slavic (N = 292), Cohen's Kappa = 1; Switzerland (N = 510), Cohen's Kappa = .875. Results revealed that a minority of children drew two-dimensional compositions: 7.4% in Japan, 25.6% in the Russian-Buryat sample, 25.7% in the Russian-Slavic sample, and 18.8% in the Swiss sample. Many children did not draw any background (Chap. 6, Table 6.2, this volume).

Fig. 7.1 Compositions representing one-dimensional space (http://ark.dasch.swiss/ark:/72163/1/0105/sLAxx2BEQjGKnyhmI4cumwO.20180702T194908382Z, http://ark.dasch.swiss/ark:/72163/1/0105/n19QwjZPTlSVr1XPW0FvXAq.20180702T190509004Z, http://ark.dasch.swiss/ark:/72163/1/0105/Qh5sT1=GTxqtXIcp8ZkOMw4.20180702T200755887Z)

Fig. 7.2 Compositions representing two-dimensional space (http://ark.dasch.swiss/ark:/72163/1/0105/DbLM1MVlTVOxXGzCCbKRKwZ.20180702T202034614Z, http://ark.dasch.swiss/ark:/72163/1/0105/jI01DeeNSp27MxwroxmaDgv.20200415T110941987222Z, http://ark.dasch.swiss/ark:/72163/1/0105/gYZxqCClQiqqydoN3_LbuQ1.20180702T201346519Z)

Table 7.2 Means of middle points of annotated representations of God

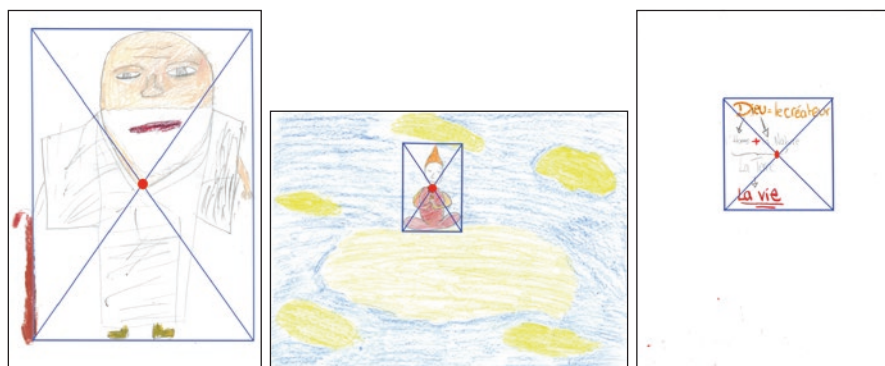| Samples	N (%)	Means of middle points of annotated representation		
		M	SD	Medians
Japan	135 (100%)	0.56	0.11	0.56
Russian-Buryat	219 (100%)	0.57	0.14	0.56
Russian-Slavic	292 (100%)	0.57	0.12	0.56
Switzerland	510 (100%)	0.53	0.15	0.52
Total	1156 (100%)	0.55	0.14	0.54

Location of the God Figure[4] in Relation to the Midline of the Page

The middle point of the annotated representation of god (the rectangular box denoting the position of the god figure on the page) was considered as the main coordinate of god's localization on the y-axis of the whole picture (sheet of paper) (see examples of annotated drawings, Fig. 7.3).

Then, it was divided by the size of the image to obtain comparable values between 0 and 1 (for more details see Cocco & Ceré, Chap. 9, this volume). Figure 7.4 presents the middle points of all annotated representations of god in each of four culture/religion samples (Japanese, Russian-Buryat, Russian-Slavic and Swiss) according the y-axis of the whole picture.

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[4] The term *figure* is used here to refer to all kinds of god representations—anthropomorphic, abstract and symbolic—found in children's drawing.

Fig. 7.3 Annotation and god's localization on the y-axis (http://ark.dasch.swiss/ark:/72163/1/0105/bd2yeyX7T_W8qkVci3iBVAV.20200318T140231899891Z, http://ark.dasch.swiss/ark:/72163/1/0105/FlrLQV2BTU6m6MEfiYYpYwp.20180702T1917032Z, http://ark.dasch.swiss/ark:/72163/1/0105/umgDtZLPTxqB26CVnIDluQj.20201008T122453226966Z)

As predicted, the means of middle points of the annotated representations were located significantly higher than the page's midline (value equal to 0.5) in all samples (see Table 7.2): $t(134) = 5.67$, $p < .001$, for the Japanese sample; $t(218) = 7.11$, $p < .001$, for the Russian-Buryat sample; $t(291) = 9.17$, $p < .001$, for the Russian-Slavic sample; $t(509) = 3.88$, $p < .001$, for the Swiss sample.

Predictors of an Up-Location of the God Figure

We conducted logistic regression analyses in order to identify significant predictors of the vertical location of the god figure on the drawing sheet. To do this the area of the sheet was divided into fifths, vertically, and then determined for each drawing whether the middle point of the god figure was positioned in the upper part (upper 2/5) or not. See Fig. 7.5 for a graphic representation of the division and examples of drawings according this division.

As for the potential predictors of position, age, gender, type of schooling, drawing format (portrait or landscape), and type of composition were used in analyses. Separate analyses for each sample (Japanese, Russian-Buryat, Russian-Slavic and Swiss) were carried out because all of the groups were not equal with regard to potential predictors. For example, the distinction between religious and regular schooling was not relevant for all samples.

Results were statistically significant for all groups except the Russian-Buryat sample, where none of the identified predictors played a significant role. We found that gender served consistently as significant predictors for the other three groups of participants. Age also served as a significant predictor in the Japanese and Russian-Slavic samples. In the Swiss group, age was not a significant predictor but the type of composition was (see below).
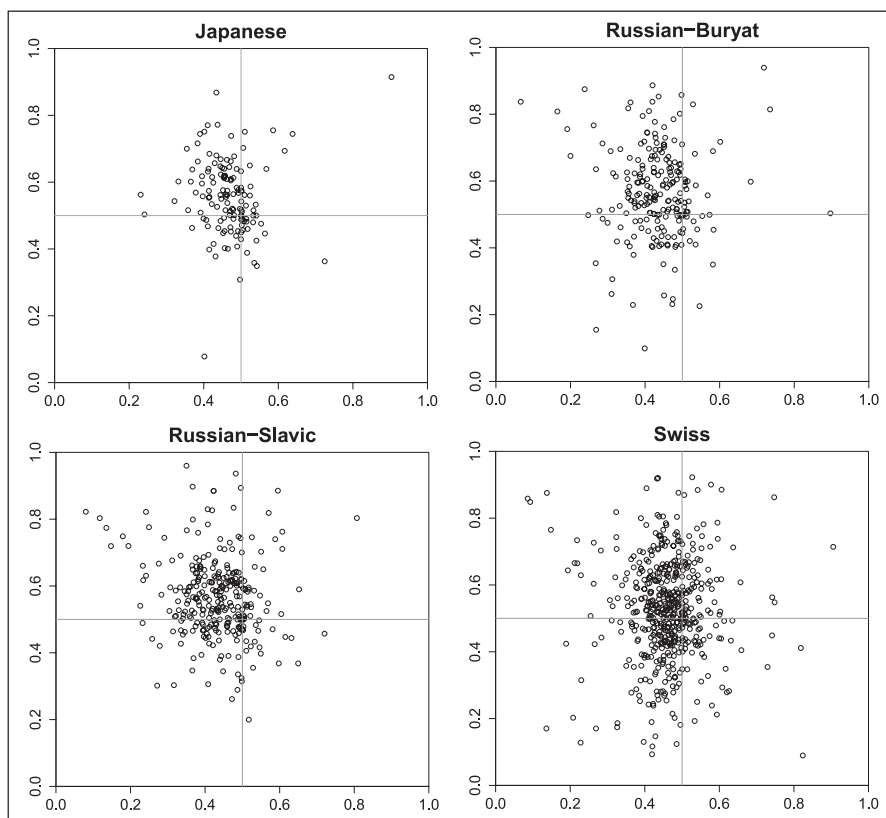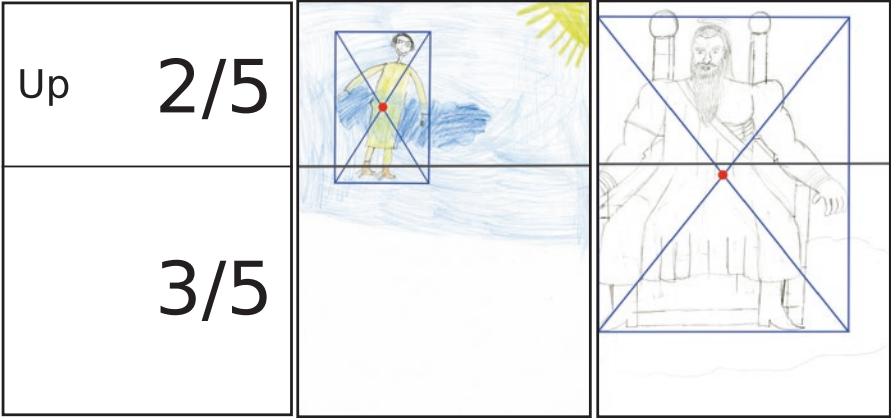
Fig. 7.4 Middle points of the annotated representations of god by the culture or religion groups

Japanese sample—The model explained 14.2% (Nagelkerke R^2) of the variance in the location of god and correctly classified 66.7% of cases ($\chi^2(5) = 14.59$, p = .012). Only age and gender of participants were statistically significant predictors (p = .046 and p = .004, respectively). Age and male gender were associated with an increased likelihood to draw the god figure high up on the page.

Russian-Slavic sample—The model explained 8.6% (Nagelkerke R^2) of the variance in the location of god and correctly classified 68.5% of cases ($\chi^2(5) = 18.89$, p = .002). Only age and gender of participants were statistically significant predictors (p = .013 and p = .01, respectively). The type of composition reached near-significance (p = .052). Age and male gender (as well as the use of a two-dimensional type of composition) were associated with an increased likelihood to draw the god figure high up on the page.

Swiss sample—The model explained 3.3% (Nagelkerke R^2) of the variance in the location of god and correctly classified 69.2% of cases ($\chi^2(5) = 12.06$, p = .034). Only the type of composition (two-dimensional) and gender of participants were statistically significant predictors (p = .017 and p = .040, respectively). Utilizing a
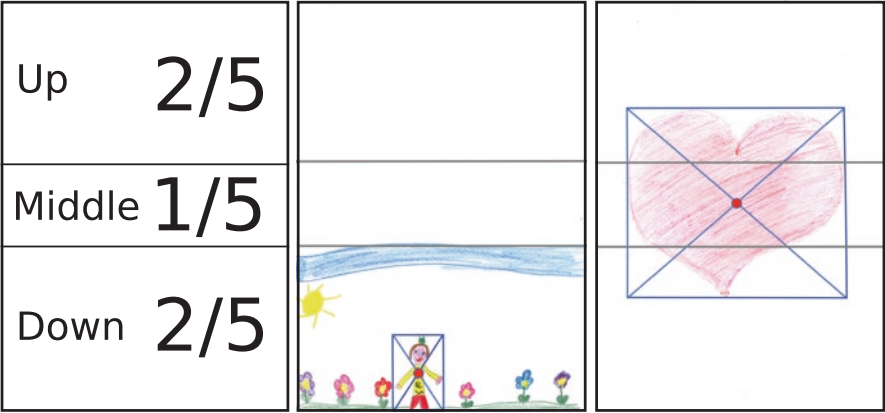
Fig. 7.5 Division of the sheet for the predictors of an up-location of the god figure (http://ark. dasch.swiss/ark:/72163/1/0105/joSAspHaQXqPxCohEcaZEQ3.20180702T190310106Z, http:// ark.dasch.swiss/ark:/72163/1/0105/LBYby6ZZRYO=3KsYD0MhoQ3.20180702T195644194Z)

two-dimensional type of composition and male gender were associated with and increased likelihood to draw the god figure high up on the page.

Distribution of God Figures Across Three Parts of the Page: Down, Middle, Up

In order to take our investigation further, we conducted additional analyses using a threefold subdivision of the page, as presented in Fig. 7.6. This analysis allowed us to find out how many children depicted god in each of the three sections of the page: lower (Down), central (Middle), and upper (Up) (see examples of drawings, Fig. 7.6). Chi-square tests were performed to analyse the distribution of drawings according to these three-divisions of the space.

Results showed significant dependency between country and the placement of the god figure: $\chi^2(6) = 31.96$, $p < .001$ (Table 7.3). Most often participants depicted god in the middle part of the sheet. The percentage varied from 52.2% in the Swiss sample, through 55.7% in the Russian-Buryat sample, to 57.9% in the Russian-Slavic sample, and 60% in the Japanese sample. A third of the children in each sample depicted god in the upper part of their drawings: 30.8% of the Swiss children, 34.1% of the Japanese children, 34.9% of the Russian-Slavic children, and 37.9% of the Russian-Buryat children. We observe that few children drew god in the lower part (down) of the sheet. The Swiss sample contained the greatest amount of such drawings (17.1%), while the percentage of god figures in the down position remained rather low in the other three samples: Japanese (5.9%), Russian-Buryat (6.4%), and Russian-Slavic (7.2%).

Up	2/5
Middle	1/5
Down	2/5

Fig. 7.6 Division of the sheet for the distribution of drawings across three parts of the page (down, middle, up) (http://ark.dasch.swiss/ark:/72163/1/0105/ETKelDqjQ8uXljNC8dTXIgo.20180702T16421404Z, http://ark.dasch.swiss/ark:/72163/1/0105/64WH4OkBQXywisbWX6tQ9wG.20180702T202318864Z)

Table 7.3 Distribution of drawings across three parts of the page

Samples	N (%)	Distribution of drawings across three parts		
		Down	Middle	Up
Japan	135 (100%)	5.9%	60.0%	34.1%
Russian-Buryat	219 (100%)	6.4%	55.7%	37.9%
Russian-Slavic	292 (100%)	7.2%	57.9%	34.9%
Switzerland	510 (100%)	17 .1%	52.2%	30.8%
Total	1156 (100%)	11.4%	55.2%	33.6%

Discussion

Over the past few decades, theories of embodied and grounded cognition have demonstrated that abstract concepts can be understood and learned through embodied experience and interaction with the environment. Consistent with these approaches, recent empirical investigations suggest that abstract concepts rely largely on spatial representations. Experimental studies have showed that activating internal representations of abstract concepts of the divine shifts the attention in external space to the higher regions of the visual field (Meier et al., 2007a; Chasteen et al., 2010). Inspired by findings of these experimental studies and following the embodied and grounded theories, we advanced the hypothesis that children would demonstrate a tendency to place god representations in the upper part of their drawings. Three differently designed analyses were performed: (1) a comparison of the means of the middle point of annotated representations of god with the midline of the page, (2) a distribution of drawings according to a twofold (up- not up) subdivision, including an examination of potential predictors, (3) a distribution of drawings across a threefold

(down-middle-up) subdivision of the page. The results of this exploratory study globally confirmed our main hypothesis. Results from both analyses suggest that children's representations of the divine incorporate spatial characteristics and are associated with higher space on the page.

Furthermore, our study demonstrates that children associate similar spatial characteristics with representations of the divine across culturally and religiously diverse contexts. A general tendency to position god figures in the upper half of pictorial representations was found in all of our samples. However, when using a threefold subdivision of the page, we observed that a majority of children drew god in the middle of the page. Following this system, drawing god high on the page came in second position, still underlying the importance of representing the divine upward. From a cross-cultural perspective, this pattern appeared across all samples, with the caveat that Swiss children were showing a greater tendency, comparatively, to draw god lower down the page. However, down, middle, and up locations on the page were similar in all samples pointing to the following order of preference: middle, up, and down, respectively.

Results also revealed that the location of god representations in the upper part of the sheet (in a threefold subdivision system) could be a function of participant's age. We expected that the youngest group (6–8 year-olds) would depict god in the lower part/and the centre of the page more often than older children would. Some children of this age, especially those who are not religiously socialized, often have little idea of what god is. Later, growing up in society, they get to know more about the meaning of the word "god" and various religious beliefs and practices that are linked to it. Our assumption was confirmed in the Japanese and the Russian-Slavic samples but not in the Swiss or the Russian-Buryat samples. A more precise qualitative investigation of drawings is needed to better understand why these last two samples did not confirm our assumption.

Another finding concerns the impact of a participant's gender on the position of god figures. Results showed that boys from all samples, except the Russian-Buryat sample, were more inclined to draw god in the upper part of drawings than girls were. One possible explanation is the confounding effect of the impact of size of the drawn representation. It is possible that the god figures drawn by girls were larger in size than the figures drawn by boys. Consequently, the centres of annotated representations would tend to be situated closer to the middle of the page. In turn, possible variations in the size of god representations could be related to the more positive attitude of girls toward the divine figure or to the degree of perceived closeness to god. A more positive attitude could be connected with female individuals generally showing greater religiosity (Donahue & Benson, 1995; Francis, 1997; Francis & Wilcox, 1996). Girls also tend to draw happy god representations more often than boys do (Ray & Kay, 2004). It has also been shown that when children feel more positive about the topic being drawn or character in their drawing, they tend to draw it larger (Burkitt & Barnett, 2006). While this is very speculative, future research could serve to verify this assumption.

In this work, we controlled for the possible impact of the type of composition (content) on the location of god representations within the pictorial space. We found that it had little effect. Only the Swiss sample showed significant effect from composition (the two-dimensional type of drawing was associated with and increased likelihood for the god figure to be positioned high up on the page). This brings further support to the idea that god is a grounded or embodied concept with mere spatial properties. That is, regardless of the specifics surrounding god's dwelling place, it is conceptualized as high, or as being above. The group of Swiss drawings appears to be at odds with the three other groups, both due to this impact of the content of composition on the location of god representations and due to a tendency to draw god representations lower down on the page compared to the other groups. Further investigation should help identify what features in the content of the drawings leads to such differences.

Unfortunately, we had no opportunity to compare the children's drawings of gods with other kinds of drawings they had made. Current evidence indicates that children usually situate figures in their drawings on a horizontal ground line that is located in the lower part of the page. According to a few studies, children aged 5–6 years introduce a horizontal ground line in their drawings that often runs parallel to the bottom of the drawing paper or they use the bottom edge of the paper as a baseline on which they place drawn figures and objects (Dalton & Burton, 1995; Golomb & Farmer, 1983; Toku, 2001).[5] As Golomb points out: two distinct areas qualified as *up* and *down* are defined in drawings done by 5-year-olds. The open space in the upper section represents the air or the sky, and gravity is generally respected (Golomb, 2004). There is empirical evidence suggesting that it is indeed rare for children to draw human figures high up on the page. Golomb and Farmer (1983) have shown that this is true for different themes (i.e., family, children playing, birthday party, garden with trees flowers and a pond), in the drawings of children aged 3–7 years. This should indirectly substantiate our claim that observations from the present research apply to god representations as a form of topic specificity (this being potentially true for other abstract concepts that involve an idea of power or authority, for example). There is, however, a major caveat to making such connections: Our participants age range was much wider, some of our participants were considerably older than those of Golumb et al. Unfortunately Golomb et al.'s studies did not examine how older children drew with regard to a vertical axis. In addition, some researchers report that with increasing age children's drawing composition becomes more complex and multiple baselines can appear, as well as no baseline at all (Dalton & Burton, 1995; Toku, 2001).

In summary, it is quite plausible that the present findings are specific not only to god representations, but also to other abstract concepts sharing similar characteristics that are embodied or grounded in perceptual experience. Findings from this study moved our investigation beyond Study I (Chap. 6, this volume) by showing

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[5] Until the ages 5–6, children draw figures and objects in an arbitrary fashion guided primarily by the availability of space (Golomb & Farmer, 1983). In our research, we have drawings from children beginning the age of 6 years old.

that children seem to conceive of god being located high up, independent of the particular place they image god's dwelling to be. This brings support to the theoretical frameworks of both embodied cognition and grounded metaphor, and makes a unique contribution to the religious domain, as well as to visual and developmental research.

Conclusion

A question that has received much attention within the field of the psychology of religion is how the concept of god is represented in human minds. Two of our studies (Chaps. 6 and 7, this volume) have shown that spatiality is both explicitly and implicitly involved in the way individuals conceive of the divine. In the first study (Part I), a systematic examination of the backgrounds in children's drawings of god revealed that children from all groups (Japanese, Buryat-Russian, Slavic-Russian, and French-speaking Swiss) most often drew god in the sky or with no background at all. The present research (Part II) provides a novel insight into how we conceptualize the divine according to space. Consistent with embodied cognition and grounded metaphor approaches, postulating that abstract concepts depend on physical modalities even if they do not have a direct physical character, the present research revealed that children in all four groups generally depict god in the upper part of their drawings. Participants' socio-demographics had an influence on where on the page they would tend to draw god. Age was generally positively associated with an upward position and other contributors (e.g., gender, schooling) had contrasted roles. Further testing indicated that the type of composition was not a major influence on the positioning of god. This is substantial evidence because it demonstrates that conceiving of god as placed higher above things is likely to be based on our own perceptual experiences. For example, someone who prays to God using gestures can visualize him above. Therefore, conceptualizing god as being above seems to go beyond the mere content of the dwelling where the divine is often depicted, such as in the sky.

Results are generally consistent with the religious iconographies representing the divine, quite literally, on clouds in the sky or somewhere in a higher place. For instance, in Christian paintings, God and Jesus are often represented as being in the sky. In resurrection and ascension pictures, the hand of God is pictured as emerging from the cloud and taking Jesus by the right hand to receive him into heaven (Davies, 1994). In Buddhist art, one of the important features of Tibetan Buddhist paintings is their alignment on a vertical central axis, which roughly coincides with the axis of the principal deity who sits or stands higher than the surrounding figures (Brauen, 2009). In addition, the association between the divine and an upward position can subjectively be noticed in numerous visual artworks of a religious nature. God and other divine figures are often depicted in some elevated place (e.g., on a throne), dominating other characters in a pictorial scene. Although this aspect is more speculative, it is worth investigating alongside the content of composition.

Limits of the Present Research and Potential Directions of Future Research

Finally, there are limitations to the present research. First, no within-subject comparisons could be carried out based on different topics, for example, god and the human being. While such comparisons may have provided more nuanced results regarding topic specificity, god representations in children's drawings did not systematically take a human form. Second, other factors such as the level of religious commitment or the positive-negative attitude toward god figure were not treated in the present study. Consequently, it is difficult to determine whether for children from our sample to associate the divine with an up location was due to power attribution (as previous studies on abstract concepts have revealed) or other more personal aspects, such as goodness or moral authority. There has been animated debate in the scientific literature on god representations and whether children, as they grow older, would tend to perceive god as increasingly distant (Heller, 1986) or increasingly close (Eshleman et al., 1999). Without necessarily speaking for or against these positions, the present research suggests that there is more to spatial processing of the divine than relative proximity—although both aspects might interact—and this should be examined in the future.

Further research is thus needed to examine topic specificity, on the one hand, and the underlying mechanisms that could sustain more idiosyncratic relationships to divine figures, on the other hand. More generally, future research will be needed to explore how our perceptual experiences with the world may structure our conceptualization of the divine. In particular, possible universalism in spatial processing of the divine should be examined further.

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