

# Interpreting ‘Front’: Perception of Space in Bengali and Kannada

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## Abstract

This paper is concerned with the nature of ‘front’ along the front/back axis. The languages taken up for the study are Bengali, a language belonging to Indo-Aryan language family, and Kannada, a language belonging to Dravidian language family. The terms for denoting ‘front’ for Bengali are ‘samne’ and ‘aage’ and for Kannada are ‘yeduru’ and ‘munde’. Experience and embodiment of spatial arrangements play an important role in the spatial cognition, and language use takes into account the different points of view.

Many factors such as proximity, vantage point, specificity, etc. play an important role in describing a given situation. It is worth mentioning that the choice of the usages of the words for denoting ‘front’ as location or direction has been seen as different in some situations and overlapping in others. The data were collected using a questionnaire which aimed to elicit the expressions for ‘front’ for the entities, whose relationship is described in terms of Figure and Ground (Talmy, 1983; 2000), from the speakers of both the above-mentioned languages, and then analysed for the factors involved.

**Keywords:** *Space, Cognition, Embodiment, Perception, Figure, Ground*

## Introduction

Space and spatial perception involve a reckoning of where one is, navigating and route finding, tracking

locations and travels in narratives, spatial reasoning, and mapping. Humans, in orienting themselves in space, use their bodies' inherent orientational properties, that is, along the up/down, left/right and front/back axes. Languages capture these basic distinctions by providing terms that reflect asymmetrical elements. In the spatial domain, languages have fundamentally different linguistic systems for representing spatial relations, reflecting different construals of the same bit of reality (Brown 2006). In other words, differences in perception have implications on the expressions construed for any particular situation.

Bengali belongs to the Indo-Aryan family of languages, while Kannada belongs to the South Dravidian group of the Dravidian language family. Typologically, both languages are free word- order languages with a default SOV (subject-object-verb) word order type. Both languages are post-positional in nature, where the location and direction are marked by postpositions or case markers.

## Methodology and Data Collection

Participants in this study were shown a constituency of objects and were asked to put forward a description. The task can be fixed, in that productions were drawn from a limited set, or were open-ended, with no restrictions on their production. The data was elicited by using a questionnaire consisting of 22 pictures. Some of the pictures were obtained from the Internet, while others were self-drawn. The pictures were accompanied with sentences above each picture, and all of the sentences had blanks to fill. To prepare the questionnaire, a Google Form was used, and the data were recorded in a Google Sheet linked to the form. The contents of the questionnaire (other than the images) included detailed instruction, and the sentences were translated into both Bengali and Kannada. Three options were provided (two showing FRONT and one as none of the above) as 'samne', 'aage' and 'opor-er kono ta noe (None of the above)' for Bengali and 'munde', 'yeduru' and 'melina yavuvu alla (None of the above)' in Kannada. These pictures were framed to depict simple situations, where all the pictures had either two objects and two humans, or one human and one object.

The spatial relations between the items (the object whose location is to be determined is the Figure and in reference to which the Figure's location needs to be described as the Ground) form the core part of this paper. A total of 38 informants, that is, 19 informants from each language community, voluntarily participated for this study, most of whom were students. To analyse a linguistic representation, the sentences of Bengali and Kannada were written using the International Phonetic Alphabet (IPA) in this paper, but using the Roman script for informants.

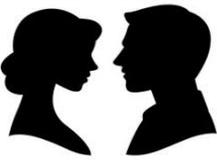
## Literature Review

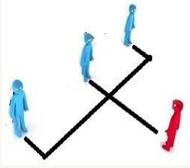
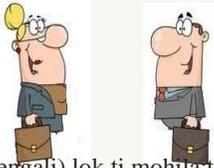
The literature here discusses work on interpreting the 'front' axial part of the 'front-back' axis. Scholars such as Talmy (1983; 2000), Langacker (1986), Landau and Jackendoff (1993), and Miller and Johnson-Laird (1976) have spoken on the spatial elements and the encoding of space along the axial

parts and frames of reference. Levinson et. al. (1992, 1996), Bennardo (2000), and Danziger (2010) have performed experiments to present the encoding of space in terms of frames of reference, in several languages, finding influence from cultural and social experiences. Tyler and Evans (2003), Lindstromberg (2010), Coventry (1999), and Feist and Gentner (2003) have emphasized geometrical and functional aspects of the ground and figure.

## Analysis

The analysis presented here takes two frames of reference (out of three prescribed by Levinson) into consideration, i.e., Relative and Intrinsic. Encoding space is not symmetrical in nature, a form which can be ascribed to a difference in perception leading to how the expressions for these situations are construed, as “an expression’s meaning is not just the conceptual content it evokes—equally important is how that content is construed” (Langacker, 2008). Construal is our ability to conceive and portray the same situation in alternative ways. Every lexical and grammatical element incorporates a certain way of construing the conceptual content evoked. In viewing a scene, what we see depends on how closely we examine it, what we choose to look at, which elements we pay most attention to, and where we view it from. One of the main components of this Construality is the vantage point, i.e. the viewing arrangement. The analysis in this paper is thus divided into three groups: Human and Human or Animate and Animate; Human/Animate and Object/ Inanimate; and Object/Inanimate and Object/Inanimate.

<p>1.</p>  <p>(Bengali) c<sup>h</sup>ele ṭa mēj ṭar _____ at<sup>h</sup>e (Kannada) _____ huḍuganu huḍugija _____ idda:ne (English) The boy is at/in _____ of the girl.</p>	<p>2.</p>  <p>(Bengali) lal lok ṭa nil lok gulo _____ dārie ac<sup>h</sup>e (Kannada) kempu bənnada vīakti ni:li bənnada vīaktigaḷa _____ nintidda:ne (English) The red man is at/in _____ of blue men</p>	<p>3.</p>  <p>(Bengali) lal lok ṭa baki lok gulo _____ dārie ac<sup>h</sup>e (Kannada) kempu bənnada vīakti bere vīaktigaḷa _____ iddane (English) The red man is at/in _____ of the rest</p>
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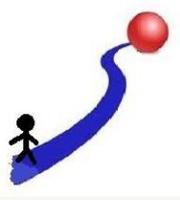
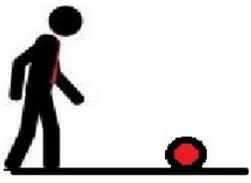
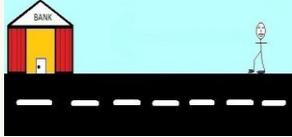
<p>4.</p>  <p>(Bengali) 'B' lok ta 'A' lok tar _____ _____ dārie ac<sup>h</sup>e (Kannada) 'B' vāktiju 'A' vāktija _____ iddane (English) 'B' person is at/in _____ of 'A' person.</p>	<p>5.</p>  <p>(Bengali) mohila ti lok tar _____ ac<sup>h</sup>e (Kannada) mōhileju puruṣana _____ iddaḷe (English) The woman is at/in _____ of the man</p>	<p>6.</p>  <p>(Bengali) lal manuṣ ta nil manuṣ guloṛ dārie ac<sup>h</sup>e (Kannada) kempu bōnnada vāktiju ni:li bōnnada vāktigōḷa nintiddane (English) The red man is standing at/in _____ of the men</p>
<p>7.</p>  <p>(Bengali) lok ti mohila tir _____ ac<sup>h</sup>e (Kannada) mōhileju puruṣana _____ iddaḷe (English) 18. The man is at/in _____ of the woman.</p>		

**Figure 1:** Human and Human or Animate and Animate

The Bengali responses showed that the scenes in pictures 1, 4, 6 and 7 have been majorly reported as the instances of 'samne' (IPA: ʃamne). This can be ascribed to a mirror-image alignment in pictures 1, 6 and 7, as both the figure and ground (i.e. the humans) are facing each other. The mirror image alignment, according to Tyler and Evans (2003), becomes a realisation in the case of animate/human figures (here onwards F) to animate/human ground (here onwards G). In the case of picture 4, it takes into account the intrinsic presence of front denoted by the facial part of the body. In both the cases above, the intrinsic front of the human body plays a major role. In pictures 2 and 5, however, 'aage' (IPA: aage) is reported as the leading response, though very bleak, and in picture 3, the responses for both 'samne' and 'aage' were equal, as 'aage' portrays the tandem alignment. The tandem alignment, according to Tyler and Evans (2003), shows the alignment of F in the further forward space of the movement or the visual field, showing a sequence. Hence the construction invokes a movement (even though it is fictive) towards the observer, involving a spatial aspect of being temporally 'at the front.'

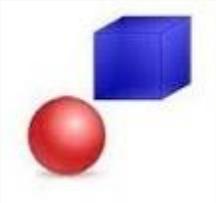
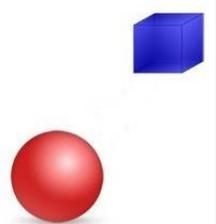
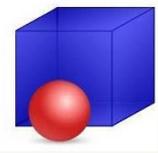
In Kannada, the response for pictures 1, 6 and 7 was the word 'yeduru' (IPA: jeduru), which depicts the same mirror-image alignment (discussed above) as what is shown by 'samne' in Bengali. For the remainder of the pictures, i.e. 2, 3, 4 and 5, the word 'munde' (IPA: munde) is depicting tandem

alignment objects (as discussed above) such as ‘age’ in Bengali. Here also in both the cases, the intrinsic front of the body plays a role in construing the scene.

<p>8.</p>  <p>(Bengali) lal bōl ṭa manuṣ ṭar _____ acʰe (Kannada) kempu ceṇḍu vīaktija _____ Ide (English) The red ball is at/in _____ of the man</p>	<p>9.</p>  <p>(Bengali) lal golok ṭa lok ṭir _____ rakʰa acʰe (Kannada) kempu ceṇḍu vīaktija _____ ide (English) The red ball is at/in _____ of the man</p>	<p>10.</p>  <p>(Bengali) puliṣ ṭa garir _____ dā rie acʰe (Kannada) pulis karina _____ nintiddane (English) The policeman is standing at/in _____ of the car</p>
<p>11.</p>  <p>(Bengali) lal golok ṭa lok ṭir _____ acʰe (Kannada) kempu ceṇḍu vīaktija _____ ide (English) The ball is at/in _____ of the man</p>	<p>12.</p>  <p>(Bengali) lal golok ṭa lok ṭir _____ acʰe (Kannada) kempu ceṇḍu vīaktija _____ ide (English) The ball is at/in _____ of the man</p>	<p>13.</p>  <p>(Bengali) bāṅk ṭa lok ṭar _____ acʰe (Kannada) bāṅk vīaktija _____ ide (English) The bank is at/in _____ of the man</p>
<p>14.</p>  <p>(Bengali) cʰele ṭa garir _____ dārie acʰe (Kannada) huḍuganu vahanəda _____ nintiddane (English) The boy is standing at/in _____ of the vehicle.</p>	<p>15.</p>  <p>(Bengali) lokṭi gacʰ ṭar dā rie acʰe (Kannada) vīaktiju mərəda _____ iddane (English) The man is standing at/in _____ of the tree</p>	<p>16.</p>  <p>(Bengali) lok ṭa garir _____ dā rie acʰe (Kannada) vīaktiju ka: na _____ nintiddane (English) The man is at/in _____ of the car</p>



determined intrinsic property of the object as in picture 10, or the further forward movement which actually invokes not only spatial but temporal ‘frontness’ as in pictures 8 and 13. In picture 18, ‘munde’ invokes a relative frame of reference with a translative property whereby the front region of the tree where the human figure can be located is away from the viewer and the back of the tree facing the viewer who is viewing from the outside (i.e. vantage point does not coincide with the position of either F or G). Figures in picture 11 and 14 were both marked as ‘melina yavuvu alla’ (none of these above), possibly due to the perception of the F being ‘upward’ rather than ‘front’ and of F being in the left-right axis rather than the front-back axis. In pictures 16, ‘yedru’ is given, possibly due to that both F and G are facing each other and hence forming a mirror-image alignment.

<p>19.</p>  <p>(Bengali) lal bōl ṭa bakṣer _____ rak<sup>h</sup>a ac<sup>h</sup>e (Kannada) cenḍu bōksina _____ ide (English) The ball is at/in _____ of the box.</p>	<p>20.</p>  <p>(Bengali) gari ṭa barir _____ dā rie ac<sup>h</sup>e (Kannada) ka:r maneja _____ ide (English) The car is at/in _____ of the house</p>	<p>21.</p>  <p>(Bengali) lal bōl ṭa nil bakṣer _____ rak<sup>h</sup>a ac<sup>h</sup>e (kannada) kempu cenḍu ni:li bōksina _____ ide (English) The red ball is at/in _____ of blue the box</p>
<p>22.</p>  <p>(Bengali) lal bōl ṭa nil bakṣer _____ rak<sup>h</sup>a ac<sup>h</sup>e (kannada) kempu cenḍu ni:li bōksina _____ ide (English) The red ball is at/in _____ of blue the box</p>		

**Figure 4:** Object/Inanimate and Object/Inanimate

In Bengali, in pictures 19 and 22, ‘samne’ shows the reflective aspect of a relative frame of reference and also the nearness or proximity to G. In picture 20, the functional intrinsic front of the house (i.e. the ‘front’ door) gives the usage of ‘samne,’ while in picture 21, the conceptualization that the ball has moved away from the box gives ‘aage’ as the response. It is interesting to note that in case of Kannada, only ‘munde’ is used to denote meaning as it encompasses the conceptual entities for denoting the

spatial arrangement.

## Observations

The frame of reference is present in all situations since it is needed to present the spatial encoding of F and G incorporating the vantage point. Different frames of reference occur for one single image, and selecting one does not entail the rejection of another or that the other does not exist. The most responded item is taken as the prevalent frame. While ‘samne’ and ‘yeduru’ incorporate a mirror image alignment, ‘aage’ and ‘munde’ incorporate tandem alignment. In the ‘Object/Inanimate and Object/Inanimate’ segment, ‘samne’ denotes the relative reflective and intrinsic frames of reference, and ‘aage’ is used to denote the tandem alignment which in turn also shows that the tandem alignment can happen in both animate as well as inanimate situations. While in Kannada, ‘munde’ does both the work of referring the frames of reference as well as tandem alignment. Here again, ‘yeduru’ is not used, as the mirror image alignment is not used in the case of two inanimate objects, though ‘samne’ is used yet not for denoting the mirror image alignment.

The differences in responses for pictures in viewing F in relation to G provides a gateway to understanding a language-specific spatial worldview, and shows that embodied cognition is a socio-culturally situated phenomenon. The mirror image alignment does seem to include an intrinsic point of view, which seems to be clear in the cases of both F and G as animate entities and also where F, being inanimate, is being accessed in a particular way. The tandem alignment incorporates a sequence which gives it more of a temporal aspect even though it may have an origin set in a spatial aspect.

Language	Terms	Frame of Reference		Alignment	
		Relative	Intrinsic	Mirror-image	Tandem
Bengali	samne	+	+	+	
	aage		+		+
Kannada	yeduru		+	+	
	munde	+	+		+

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