

## **Bending Over Backwards: Embodiment Motivates Language**

Melissa Zheng & Robert F. Williams  
*Lawrence University*

For centuries, the body was not a focal point when considering how humans think and create language. The disembodied view of mind disregards the body's cognitive influence on the way we conceptualize. Its advocates deny that anything about the body is necessary for characterizing what concepts are. But how can we ignore the body when we experience life and interact with the world through a body? How can we understand meaning if we do not first understand its most fundamental root? I have taken the phrase "bending over backwards" for someone as evident of a strong relationship between embodiment and language. There is a reason why we do not say, "I'm bending over forwards" for someone. As embodied beings, to coin the phrase, "bending over backwards," we must first feel the bodily experience of strain and difficulty. It is only when we comprehend the physical struggle of bending over backwards that we can develop and comprehend its figurative meaning.

To test the connection between embodiment and language, I conducted an experiment involving yoga poses and linguistic response times. My study involved two groups: one doing a forward bend (folded forward fold) and the other doing a backbend (wheel). After performing the pose, participants were asked to describe a time in which they had to bend over backwards for someone, and the time to initiation of response was recorded. Results revealed that those who had performed the backbend were able to recall in much less time an instance when they felt like they were bending over backwards for someone. I argue that this is because they were able to directly link the physical bend to its figurative use. The correlation implies that we should not be quick to accept the received view of the mind as detached from the body, but rather that we should explore (as Gibbs, Boroditsky, and others have done) how embodiment shapes conceptual meaning and language. As Gibbs has suggested, embodiment may not be the only foundation for language and thought, but it plays an essential role in the development of it. We naturally build phrases in reference to our body because our conceptual system is grounded in sensorimotor experience. According to Lakoff and Johnson (1999), this embodied view of mind explains "why it is possible for our concepts to fit so well with the way we function in the world" (p. 43).

### **References**

- Boroditsky, L. (2000). Metaphoric structuring: Understanding time through spatial metaphors. *Cognition*, 75(1): 1-28.
- Gibbs, R. (2006). *Embodiment and cognitive science*. New York: Cambridge University Press.
- Lakoff, G. & Johnson, M. (1999). *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought*. New York: Basic Books.



Figure 1. Seated Forward Fold



Figure 2. Wheel

Table 1. Forward Bend Participants

Participant #	Time (seconds)
1 (M, 21)*	19.781
2 (F, 19)	5.363
3 (M, 19)	10.506
4(F, 19)	6.994
5 (M, 18)	2.826
6 (F, 21)	1.939
7 (M, 20)	7.350
8 (F, 19)	2.762
9 (M, 22)	3.469
10 (F, 19)	2.613
11 (M, 21)	16.352
12 (F, 19)	7.207
<b>13 (M, 22)</b>	<b>1.239</b>
14 (F, 19)	17.496
15 (M,18)	18.243
<b>16 (F, 20)</b>	<b>38.245</b>
17 (M, 20)	4.346
18 (F, 21)	8.846
19 (M, 21)	6.403
20 (F, 22)	9.305

Table 2. Backbend Participants

Participant #	Time (seconds)
1 (M, 21)	2.777
2 (F, 21)	15.07
3 (M, 22)	6.671
4 (F, 20)	6.335
5 (M, 19)	1.474
6 (F, 22)	3.155
7 (M, 20)	1.806
8 (F, 22)	8.198
9 (M, 20)	1.231
<b>10 (F, 19)</b>	<b>.509</b>
11 (M, 19)	3.565
<b>12 (F, 22)</b>	<b>14.736</b>
13 (M, 19)	3.580
14 (F, 19)	1.491
15 (M, 22)	2.355
16 (F, 20)	2.433
17 (M, 19)	.980
18 (F, 20)	1.791
19 (M, 21)	1.311
20 (F, 20)	1.733

\* (M, 21): (M=Male, Age=21)

Table 3. Total Time/ Average Time (*rounded to the nearest millisecond*)

Group	Total Time (seconds)	Average Time (seconds)
1 (Forward Bend)	191.285	9.564
2 (Backbend)	81.201	4.060

Table 4. New Total Time/ Average Time with the fastest and slowest times dropped (*rounded to the nearest millisecond*)

Group	Total Time (seconds)	Average Time (seconds)
1 (Forward Bend)	151.801	8.433
2 (Backbend)	65.622	3.645