Corrections

NEUROSCIENCE

Correction for "Restoring the sense of touch with a prosthetic hand through a brain interface," by Gregg A. Tabot, John F. Dammann, Joshua A. Berg, Francesco V. Tenore, Jessica L. Boback, R. Jacob Vogelstein, and Sliman J. Bensmaia, which appeared in issue 45, November 5, 2013, of *Proc Natl Acad Sci USA* (110:18279–18284; first published October 14, 2013; 10.1073/pnas.1221113110).

The authors note, "For the 'hybrid' location discrimination task, we report data obtained from 27 electrodes, 16 of which were in area 1; the 11 electrodes in area 3b were divided evenly across the two animals (6 and 5). We had previously tested all of the electrodes, including those in area 3b, in the detection and discrimination tasks (as shown in Fig. 3) and found them all to yield approximately equivalent performance (see Fig 3*A*). We noticed in the hybrid location discrimination task, however, that one of the animals performed much more poorly based on stimulation of area 3b than it did based on stimulation of area 1 (while the other animal performed better based on stimulation of area 1). Having no reason to question any of the arrays, we attributed this discrepancy to differences across animals and arrived at the conclusion, based on pooled data from both animals, that stimulation of the two areas yields equivalent performance in the 'hybrid location discrimination' task. The overall conclusion, then, was that stimulation of neurons in area 3b and 1 evokes percepts that are equally localized on the skin.

"Shortly after publication of the paper, we repeated detection experiments across the arrays and found that the animal could no longer detect stimulation through the array in area 3b that had yielded poor performance in the hybrid location discrimination task. It is therefore likely that this array had failed between the time we conducted the initial detection and discrimination experiments and the time we conducted the hybrid location discrimination task (which required 2–3 months of retraining). If this is the case, and we eliminate data from that bad array, then the median performance on hybrid trials is 83% (up from the 80% that was originally reported), which is still statistically poorer than that on the location-matched mechanical trials [median difference between performance on mechanical and hybrid trials was 3.3% rather than 5.6%, $t_{(119)} = 6.1$, $P < 0.001$] (see the corrected Fig. 2). Thus, we probably underestimated overall performance on hybrid trials, and thus the degree to which artificial percepts are localized, in the original publication. Importantly, however, performance on hybrid trials based on stimulation of area 3b was significantly better than performance based on stimulation of area 1 [median $\Delta p = 0.028$ and 0.054 for areas 3b and 1, respectively; t test: $t_{(76)} = 2.8$, $P < 0.01$]. Thus, based on the data obtained from only one animal, it seems as though stimulation of area 3b elicits more localized percepts than does stimulation of area 1, as might be expected given that neurons in area 3b tend to have smaller receptive fields than their counterparts in area 1 (1, 2)."

As a result of this error, Fig. 2 and its legend appeared incorrectly. The corrected figure and its corresponding legend appear below.

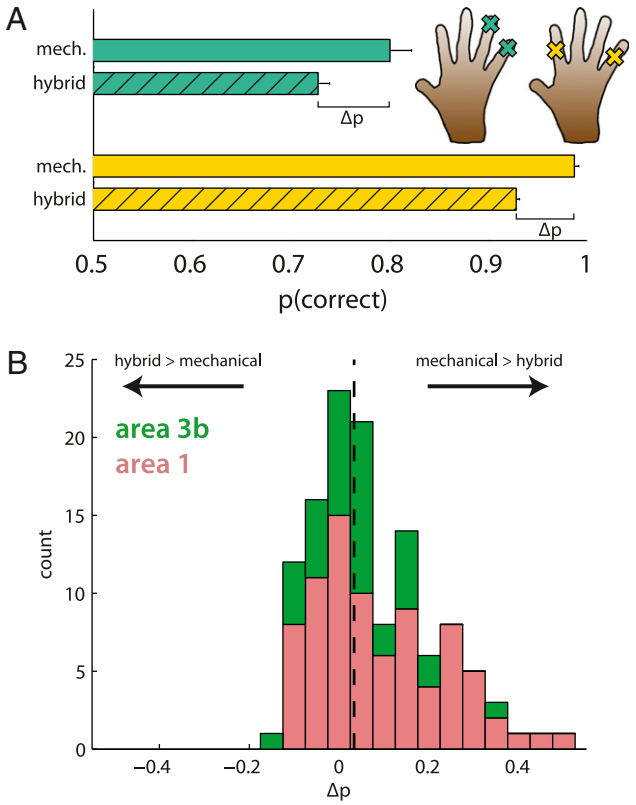

Fig. 2. Localization performance was similar with mechanical touch and ICMS. (*A*) On both mechanical and hybrid trials, the relative locations of stimuli applied to widely spaced digits were more accurately discriminated than were the relative locations of stimuli applied to adjacent digits. Measured from one animal, mechanical performance was based on 1,160 and 1,031 trials, respectively (green and gold); hybrid performance on 246 and 196 trials, respectively. To compare performance on hybrid trials and performance on mechanical trials matched for hand location, we computed the difference between the two: $\Delta p = p_{mech}(\text{correct}) - p_{hybrid}(\text{correct})$. (*B*) Performance on mechanical and hybrid trials was nearly equivalent. Shown is the distribution of Δp for the two animals tested on this task (88 stimulus pairs, 21 different electrodes, 16 of which are UEAs). Across electrodes, performance was significantly above chance, demonstrating that ICMS yields spatially localized percepts. Performance on hybrid trials was somewhat lower than on mechanical location discrimination trials (median $\Delta p = 0.033$), suggesting that the elicited percepts may be somewhat more diffuse than natural ones. There was no significant difference in performance based on stimulation of areas 3b or 1, so data from these two areas are pooled.

1. Sur M, Garraghty PE, Bruce CJ (1985) Somatosensory cortex in macaque monkeys: laminar differences in receptive field size in areas 3b and 1. *Brain Res* 342(2): 391–395.

2. Sripati AP, Yoshioka T, Denchev P, Hsiao SS, Johnson KO (2006) Spatiotemporal receptive fields of peripheral afferents and cortical area 3b and 1 neurons in the primate somatosensory system. *J Neurosci* 26(7):2101–2114.

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NEUROSCIENCE

Correction for "AMPA receptor exchange underlies transient memory destabilization on retrieval," by Ingie Hong, Jeongyeon Kim, Jihye Kim, Sukwon Lee, Hyoung-Gon Ko, Karim Nader, Bong-Kiun Kaang, Richard W. Tsien, and Sukwoo Choi, which appeared in issue 20, May 14, 2013, of *Proc Natl Acad Sci USA* (110:8218–8223; first published April 29, 2013; 10.1073/pnas.1305235110).

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SYSTEMS BIOLOGY, CHEMISTRY

Correction for "Heterogeneity in protein expression induces metabolic variability in a modeled *Escherichia coli* population," by Piyush Labhsetwar, John Andrew Cole, Elijah Roberts, Nathan D. Price, and Zaida A. Luthey-Schulten, which appeared in issue 34, August 20, 2013, of *Proc Natl Acad Sci USA* (110:14006–14011; first published August 1, 2013; 10.1073/pnas.1222569110).

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