Between Order and Chaos:
Addenda

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(Dated: May 8, 2013)

We correct a number of typographical errors in the published version of the 2012 Nature Physics review article "Between Order and Chaos". Corrected versions are available online at the journal. A corrigendum was also published there in print.

Contents

I. TIME SERIES NOTATION

A dozen and a half typographical errors related to time series notation appear in the published version of the 2012 Nature Physics review "Between Order and Chaos"; that is, Ref. [1]. In the original LaTeX, these notations are determined by macros and so always appear correct in all instances, if they are correct in any one instance.

In any case, the published result is at best confusing and read literally nonsensical. Here, I provide a list of corrections.

First, there are typographical errors in the notation for a bi-infinite chain of random variables and its past, future, and blocks. The bi-infinite chain is denoted:

$$X_{:} = \ldots X_{t-2} X_{t-1} X_t X_{t+1} \ldots \;, \tag{1}$$

The past up to, but not including, time t is:

$$X_{:t} = \ldots X_{t-2} X_{t-1} \;, \tag{2}$$

the future starting at time t is:

$$X_{t:} = X_t X_{t+1} \ldots \;, \tag{3}$$

and a block from time t up to, but not including, time t' is:

$$X_{t:t'} = X_t X_{t+1} \ldots X_{t'-1} \;, t < t' \;, \tag{4}$$

These occur on page 18, column 1, second full paragraph.

Second, the notation for a length-ℓ word, denoted $x_{0:\ell}$, is incorrectly rendered as $x_{:\ell}$ in the following places:

1. In the paragraph immediately following the preceding typographical errors: in the definition of $H(\ell)$ and in $\Pr(x_{0:\ell})$.

2. Page 19, column 1, fifth full paragraph: Six occurrences that should be $x_{0:\ell}$.

3. Page 20, column 1, ninth full paragraph: Three occurrences that should be $x_{0:\ell}$.

Third, the futures appear wrongly denoted in the following locations:

1. Page 20, column 2, last paragraph: the future $x_{:} = HHHHH\ldots$ should be denoted $x_{0:} = HHHHH\ldots$.

2. Page 21, column 1, fourth full paragraph: the future $x_{:} = THTHTHTH\ldots$ should be denoted $x_{0:} = THTHTHTH\ldots$.

Time series notations appear correctly elsewhere.

II. OTHER TYPOGRAPHICAL ERRORS

Finally, in Figure 1's caption: The distribution noted there should be denoted $\Pr(A, B, C, D)$. That is, there should be commas, not semi-colons. Ref. 44 there should be Ref. 45.

Acknowledgments

[1] J. P. Crutchfield. Between order and chaos. *Nature Physics*, 8(January):17–24, 2012.