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CORRIGENDUM
'The Asymptotic Number of Connected *d*-Uniform Hypergraphs' — CORRIGENDUM

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The authors would like to rectify a mistake made in Theorem 1.1 of their article (Behrisch, Cojaa-Oghlan & Kang 2014), published in issue 23 (3). The text below explains the changes required.

1. Correction to Theorem 1.1

The formula for the probability that the random hypergraph $H_d(n,m)$ is connected given in [1, Theorem 1.1] is incorrect. With $H_d(n,m)$ denoting the random d-uniform hypergraph with n vertices and m edges, the correct version of Theorem 1.1 reads as follows.

Theorem 1.1. *Let $d \geqslant 2$ be a fixed integer. For any compact set $\mathcal{J} \subset (d(d-1)^{-1}, \infty)$ and for any $\delta > 0$ there exists $n_0 > 0$ such that the following holds. Let $m = m(n)$ be a sequence of integers such that $\zeta = \zeta(n) = dm/n \in \mathcal{J}$ for all n. There exists a unique number $0 < r = r(n) < 1$ such that*

$$r = \exp\left(-\zeta \cdot \frac{(1-r)(1-r^{d-1})}{1-r^d}\right). \tag{1.1}$$

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Let $\Phi_d(r,\zeta) = r^{\frac{r}{1-r}}(1-r)^{1-\zeta}(1-r^d)^{\frac{\zeta}{d}}$ *for* $d \geqslant 2$. *Furthermore, define, for* $d > 2$,

$$R_d(n,m) = \frac{1-r^d-(1-r)(d-1)\zeta r^{d-1}}{\sqrt{(1-r^d+\zeta(d-1)(r-r^{d-1}))(1-r^d)-d\zeta r(1-r^{d-1})^2}} \cdot \exp\left(\frac{(d-1)\zeta(r-2r^d+r^{d-1})}{2(1-r^d)}\right) \cdot \Phi_d(r,\zeta)^n,$$

and for $d = 2$,

$$R_2(n,m) = \frac{1+r-\zeta r}{\sqrt{(1+r)^2-2\zeta r}} \cdot \exp\left(\frac{2\zeta r+\zeta^2 r}{2(1+r)}\right) \cdot \Phi_2(r,\zeta)^n.$$

Finally, let $c_d(n,m)$ *denote the probability that* $H_d(n,m)$ *is connected. Then for all* $n > n_0$ *we have*

$$(1-\delta)R_d(n,m) < c_d(n,m) < (1+\delta)R_d(n,m).$$

2. Correction to the proof of Theorem 1.1

The mistake in [1, Theorem 1.1] derives from an error in [1, Lemma 2.1]. Specifically, the expression given for v in [1, equation (2.4)] has to be replaced by

$$v = \exp\left(\frac{(d-1)rc}{2(1-r)}(1-2r^{d-1}+r^{d-2})\right).$$

With this correction, the argument given in [1, Section 2] yields the correct result as stated above.

The erroneous formula [1, equation (2.4)] stems from [3, Lemma 10], where the expression

$$\exp\left[b_5 m - \mu - \frac{(d-1)(1-a_5)b_5 c}{2}\right]$$

has to be replaced by

$$\exp\left[b_5 m - \mu - \frac{(d-1)(1-a_5)b_5 c}{2a_5}\right].$$

The a_5 in the denominator slipped into [3, Section 3.2] in the step from equation (22) to the equation following (23).

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