

# Graphical Models—Errata

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## Abstract

This note identifies some of the known typographical and other errors in my book Lauritzen (1996).

- p 23** line 11 from bottom: ‘joins of hypergraphs’ should read ‘joins of decomposable hypergraphs’;
- p 33** line 3 from bottom: global should read local;
- p 48–49** Proof of Proposition 3.25 is incorrect, but Proposition itself is true. Must allow chains to be self-intersecting, see Richardson (2003);
- p 50** line 9 from bottom should read  
(DP) if for any pair  $(\alpha, \beta)$  of vertices with  $\beta \in \text{nd}(\alpha)$  and  $\beta \not\rightarrow \alpha$ ,
- p 52** Reference to perfectness should be Section 2.1.1 (page 7), not 2.1.3;
- p 77** line 3 from above. The cumulant function should be  $\psi(\theta) = \log \langle q, e^\theta \rangle$ .
- p 194** The last three lines before *Comparing nested decomposable models* should read

$$d = -|n| \log b = -|n| \log \frac{\det \text{ssd}_\Gamma \det \text{ssd}_{\Gamma^*}(\Delta^*)}{\det \text{ssd}_{\Gamma^*} \det \text{ssd}_\Gamma(\Delta^*)}.$$

Standard linear model theory gives that  $B$  follows the beta distribution  $\mathcal{B}\{(|n| - |\Gamma| - |\mathcal{I}| + 1)/2, |\mathcal{I}_{\Delta^*}|(|\mathcal{I}_\delta| - 1)/2\}$  independently of the counts.

- p 217** line 15 from bottom: formula should read

$$\xi(i | j, z) = c(i | j) + C(i | j)z.$$

- p 259** Formula (C.7) should read

$$\text{Cov}(S_{ij}, S_{uv}) = n(\sigma_{iu}\sigma_{jv} + \sigma_{iv}\sigma_{ju}).$$

And the last formula on the page should read

$$\text{Cov}(S^{ij}, S^{uv}) = \frac{k_{iu}k_{jv} + k_{iv}k_{ju} + \frac{2k_{ij}k_{uv}}{(n-p-1)}}{(n-p)(n-p-1)(n-p-3)}.$$

This error has been corrected in later printings of the book.

**p 261** line 6 from bottom: The constant in the Wishart distribution  $c(p, n)$  should be

$$c(p, n) = 2^{np/2} \pi^{p(p-1)/4} \prod_{i=1}^p \Gamma\{(n+1-i)/2\}.$$

**p 263** Formula (C.12) should read

$$\sigma^2(t) = 4 \sum_{i=1}^m u_i^2 \psi' \{u_i(1-2t) + \xi_i\} - 4 \sum_{j=1}^n v_j^2 \psi' \{v_j(1-2t) + \eta_j\};$$

**p 278** Title of Almond (1995) is Graphical belief *modeling*;

**p 281** Title of Darroch *et al.* (1980) is Markov fields and log-linear *interaction* models for contingency tables;

**p 292** H. D Wold should be H. O. Wold (twice).

## References

- Lauritzen, S. L. (1996). *Graphical Models*. Clarendon Press, Oxford, United Kingdom.
- Richardson, T. S. (2003). Markov properties for acyclic directed mixed graphs. *Scandinavian Journal of Statistics*, 30:145–158.