**OKUYAMA: Supplementary material, Appendix 1**

The example discussed in the Introduction section (Mills and Lacan 2004) is quantitatively evaluated here. The treatment in which five hosts were presented to a parasitoid is considered. The reported functional response model is a type I functional response, with parameter *a* = 1.32 (hour−1) per parasitoid. The probability that a host escapes from parasitism is *e*−*aT* ≈ 1.74 × 10−14 when the experimental duration is *T* = 24 (hours). When there are five hosts, the probability of four or fewer hosts being parasitised (*i.e.,* partial parasitism) is 8.72 × 10−14, which can be computed from a binomial distribution with size and probability parameters of 5 and 1 − *e*−*aT*, respectively. In other words, if parasitoids behave according to the mechanistic assumption of the reported functional response model, we expect all five hosts to be parasitised. Although the probability of partial parasitism is not zero, the likelihood of observing partial parasitism is much lower than one in a million replications in expectation.