

### Figure Captions

*Figure 1.* Example stimulus from experiment 1. Stimulus consists of two elements (1) the two squares with a number of dots, one of which is the referent of the instruction; (2) the text of the instruction that identifies the target with a referring expression.

*Figure 2.* Experiment one results. This figure plots the vagueness advantage in each of the conditions involved in the significant three-way interaction between vagueness, subitizability, and target size, such that a positive number reflects an *advantage* of vagueness in that condition, and a negative number reflects a *disadvantage* of vagueness. The plot shows that there is a vagueness advantage in the condition “not-subitizable” when the referring expression indicates the bigger number as target, but a consistent disadvantage of vagueness in the other conditions.

*Figure 3.* An example stimulus from experiment 2. First the referring expression was presented (left panel). Then after a keypress, and a fixation cross (not pictured) the squares and dots were presented without repetition of the referring expression (right panel)

*Figure 4.* Experiment 2 results. The plot shows 3 significant trends in response time: the linear trends for RT to decline across increasing numerical distance in each of the precise and vague conditions; and the significant interaction between these 2 linear trends

*Figure 5.* An example stimulus from experiment 3

*Figure 6.* Results for experiment 3