

Fig. S1. The time course of the population responses of DOF selective neurons in monkey JI. Black and gray lines represent preferred and non-preferred DOF, respectively. In this animal, the difference appeared much later in the case of the large figure than in the case of the small figure. The time course of the responses was also unusual. Unlike those of the other animals, in which the firing rates dropped after the peak, the responses in this animal were sustained after the initial rise. In the preferred DOF condition, the firing rates even increased after the first peak. A possible explanation would be that the onset of contours in the RF surround initially has a general transient suppressive effect (gain normalization?) which is later overcome by facilitation on the preferred side. The suppression is stronger for the larger figures, because more of the surround is stimulated. The relative strength of suppression and facilitation might differ between animals. If, in JI, the inhibitory process had been stronger than in the other animals, this would explain the peculiar dip of the firing rate after the initial slope, and also the delay of the DOF signal for the larger figures.