GENERAL DISCUSSION

In Experiment 1 in which we examined memory for story material in an immediate recall situation, collaborative inhibition was obtained—that is, the number of correct recall units from collaborative pairs was smaller than that from nominal pairs, replicating the results from previous studies (e.g., Basden et al., 1997; Meudell et al., 1992, 1995; Weldon & Bellinger, 1997). In Experiment 2 in which participants recalled the story material after a 1-week delay, collaborative inhibition disappeared: The collaborative recall pairs showed a slightly better recall performance than the nominal pairs. In the following sections, we will first discuss possible sources of collaborative inhibition in terms of balance between newly produced items and forgotten items in the second recall test. Then the role of cross cueing in collaborative recall will be discussed.

In Experiment 1 where collaborative inhibition was observed, a smaller number of newly generated items and a greater number of forgotten items were reported in the collaborative recall condition than in the individual recall condition. Both types of items contributed to a decrease in memory performance in the latter condition. In contrast, the earlier studies suggested that collaborative inhibition might be mainly caused by a loss of information during collaborative recall (e.g., Basden et al., 1997; Meudell et al., 1992, 1995; Weldon & Bellinger, 1997).

For example, Andersson and Rönnberg (1995) found that collaborative inhibition occurred primarily because their participants failed to recall items that they had initially retrieved, and not because the participants generated fewer new items. There might be two important differences between their experiment and the present one. First, an incidental learning paradigm was used in the present study, whereas Andersson and Rönnberg (1995) used an intentional learning scheme in which the participants were instructed to memorise the material for a later recall. Second, free recall tests were used in the present study, whereas their investigation involved a recall task requiring the answers to 32 questions based on story material. Currently, we cannot conclude which factor (or both) leads to the difference in the newly produced items, and this point should be examined in future studies. However, we must suggest that the results from the current and earlier studies are highly compatible in other aspects, in spite of the large procedural differences, indicating the robustness of the phenomena: One of the sources of collaborative inhibition in an immediate recall condition is the loss of a large amount of information through collaborative remembering.

In Experiment 2, in which collaborative inhibition was *not* observed, the collaborative pairs showed fewer lost items than the nominal pairs, although there was not a significant difference in the number of the newly produced items between the collaborative pairs and the nominal pairs. The conclusion from these and the previous results is that collaborative remembering did not facilitate memory through the generation of new information in an immediate and delayed recall procedure. A key factor that contrasts the collaborative recall with the individual recall condition in the delayed test paradigm would be the number of forgotten items.

Why then does collaborative remembering induce forgetting in an immediate recall test as in Experiment 1 and protect memory items from forgetting in a delayed recall test as in Experiment 2? To answer this question, we need to elaborate a hypothesis about the effectiveness of cross cues during collaborative remembering. In other words, it is necessary to clarify the difference in cueing effects on immediate recall and delayed recall procedures.

During an individual recall test, participants can use only retrieval cues that are produced by themselves (self cues). In contrast, participants in collaborative pairs can use retrieval cues produced by the other member of the pair (cross cues) in addition to their self cues. Perhaps, these cross cues might behave differently depending on the timing of recall tests. In particular, the effect of cross cueing might be negative in an immediate recall (Experiment 1), but positive in a delayed recall (Experiment 2).

As Basden et al. (1997) argued, the effect of cross cueing in collaborative remembering seems to be based on similar mechanisms those underpinning the part-set cueing effect. In an immediate recall test, as is a standard part-set cueing situation, it would be difficult for participants in collaborative pairs to use the stored chunking for their recall because the retrieval processes might be disrupted by the given cross cues. In contrast to the immediate recall condition, it is known that delayed testing leads to a *positive* part-set cueing effect, whereby the part-set cueing facilitates the retrieval of the items in the stimulus set, as Raaijmakers and Phaf (1999) showed. Given