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Tai chimpanzees anticipate revisiting high-valued fruit trees from further distances

The use of spatio-temporal memory has been argued to increase food finding efficiency in rain forest primates. However, the exact content of this memory is poorly known to date. This study investigated what specific information from previous feeding visits chimpanzees (*Pan troglodytes verus*), in Tai National Park, Côte d'Ivoire, take into account when they revisit the same feeding trees. By following five adult females for many consecutive days, we tested from what distance the females directed their travels towards previously visited feeding trees and how previous feeding experiences and fruit tree properties influenced this distance. To exclude the influence of sensory cues, the females' approach distance was measured from their last significant change in travel direction until the moment they entered the tree's maximum detection field. We found that chimpanzees travelled longer distances to trees at which they had previously made food grunts and had rejected fewer fruits compared to other trees. In addition the results suggest that the chimpanzees were able to anticipate the amount of fruit that they would find in the trees. Overall, our findings are consistent with the hypothesis that chimpanzees act upon a retrieved memory of their last feeding experiences long before they revisit feeding trees, which would indicate a daily use of long-term prospective memory. Further the results are consistent with the possibility that positive emotional experiences help to trigger prospective memory retrieval in forest areas that are further away and have fewer cues associated with revisited feeding trees.