Prey perception in feeding-current feeding copepods - DTU Orbit (23/12/2018)

**Prey perception in feeding-current feeding copepods: Reply to comment**

We reply to the comments of Paffenhöfer and Jiang () who argues that remote chemical prey perception is necessary for feeding-current feeding copepods to fulfill their nutritional requirements in a dilute ocean, that remote chemical prey detection may only be observed at very low prey concentrations, and that chemical prey perception is feasible if prey cells release dissolved organic material in short-lasting but intense bursts. We demonstrate that mechanoreception at a very short range is sufficient to sustain a living, even in a dilute ocean. Further, if chemoreception requires that prey cells have short intense leakage burst, only a very small fraction of prey cells would be available to the copepod at any instance in time and, thus would be inefficient at low prey concentration. Finally, we report a few new observations of prey capture in two species of copepods, Temora longicornis and Centropages hamatus, offered a 45-μm sized dinoflagellate at very low concentration. The observed short prey detection distances, up to a few prey cell radii, are consistent with mechanoreception and we argue briefly that near-field mechanoreception is the most likely and common prey perception mechanism in calanoid copepods.

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