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Interactive comment on "Characterizing photosymbiosis in modern planktonic foraminifera" *by* Haruka Takagi et al.

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Ln 56-57: Is kleptoplasty a possibility? Ln 249-250: Is this based on the chlorophyll functionality or have the symbionts been identified? Please, clarify. Ln 257-258: Could it be the other way around? They require more pigment because photosynthesis is not that efficient? Ln 270-272: Unless physiological studies have been conducted confirming the nature of the algal-host relationship, they might in fact all be 'facultative'. Ln 276-278: If the host can acquire food, then increasing the algal biomass might not be necessary. Ln 280-281: Yes, but it can also mean that what authors are calling 'obligated' symbiont-bearing species are actually mixotrophics (as in most cases), which are obligate symbionts but also acquire energy through feeding. Ln 281-284: Please, clarify how this can be true. In benthic forams, there is no sure thing as 'certain al-

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gae', as host species are very conserved when it comes to choosing an algal partner (please see Prazeres & Renema 2019, Biological Reviews). Also, symbiosis is a very fine tuned relationship. Ln 288: I am not sure that's how symbiosis work, at least not in benthic forams. Please, clarify this assertion. Ln 289-290: This is actually not a good reference, given that it not symbiosis at all, just kleptoplasty, which actually contradicts what authors are saying. Ln 293: The types of symbioses mentioned here need to be defined early on. Whats the difference between: 'facultative' and 'transient'? Are they being used interchangeably? Ln 304-305: I would be very careful stating that planktonic forams are phototrophics, as they are more likely to be mixotrophic to some degree. Ln 338-340: This can also indicate mixotrophy, or a less dependency on the algal symbionts. It seems to me that the authors are assuming that all energy is coming from the symbiosis with algae, which might not be the case. Nowhere in the text that authors mention mixotrophy (except when talking about benthic forams). If this is not the case, the authors need to add citations with compeling evidence that planktonic forams that host dinoflagellates are only photoautotrophs. Ln 351-352: Please, re-write. A sentence should never finish in a preposition. It is fine in spoken English but not in written English. Ln 360-362: In the case of planktonic forams, the symbiont selects the host? Please, clarify. Ln 381-382: Since the authors mentioned kleptoplasty in benthic foraminifera, and later on suggested for planktonic forams, just having active chlorophyll is not convincing, it is indicative. Figure 11: Typo. Please amend from 'Aquired' to "Acquired'.

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