Three approximators which are almost / more or less / be-gadol the same

Main data: The Hebrew particles kimat (almost), paxot o yoter (more or less) and be-gadol (literally ‘in big’) seem to yield similar effects in e.g. (1), where they all strongly implicate that the degree to which the room is clean is a bit lower than maximal:
(1) ha-xeder kimat / paxot o yoter / be-gadol naki (“The room is almost / more or less / begadol clean”)

However, there are also differences between these particles (and their cross-linguistic correlates). For example, Amaral & del Prete (2010) (A&dP) consider the (Italian counterparts of) (2a) and (2b):

(2a) John arrived at almost 3 p.m.  b. John arrived at more or less 3 p.m.

They show that whereas (2a) with almost entails that John arrived (closely) before 3 (e.g. at 2.55), (2b) with more or less can be true also if John arrived (closely) after 3 (e.g. at 3.05). In addition, (2a), with almost but not (2b) with more or less strongly entails that the prejacent (John arrived at 3) is false. For example, if one finds out that John arrived at 3 p.m. sharp she will consider (2a) false, but (2b) still true. Considering the Hebrew version of (2a) with kimat and of (2b) with paxot o yoter or be-gadol, seem to yield the same effects.

However, different effects can be found in e.g. (3):

(3) (What did Mary do in the party?) hi kim’at / paxot o yoter / be-gadol rakda (“She almost / more or less / begadol danced”)

(3) with kimat yields a counterfactual reading, with paxot o yoter a reading where what Rina did resembled dancing, and with be-gadol either this ‘resemblance’ reading or a reading where dancing is the main thing she did, or the thing she did most of the time. Notice also that in some cases only be-gadol is felicitous as in the answer to “Are you coming to the party?” in (4):

(4) #kimat / #paxot o yoter / be-gadol ken (“#almost / #more or less / begadol yes”)

Previous analyses: A&dP take differences as in (2a,b) to indicate that almost and more or less involve different operations (cf. Sevi (1998) for similar claims). In particular, they claim that almost indicates that its prejacent is false (the ‘polar’ component), and that an alternative to p, which is located on a scale triggered by the associate of almost (possibly with the help of contextual support), and which is lower and close to p on that scale is true (the proximity component) (cf. Hitzeman 1992, Sevi 1998 and Penka 2006 for similar proposals). In contrast, they emphasize that a sentence with more or less does not reject the truth of the prejacent (no polar component), and take the fact that (2b) may be true even if shortly after 3 to indicate that more or less is not scalar.

A new proposal: We propose that the Hebrew kimat (and almost), paxot o yoter (and more or less), and be-gadol should be all analyzed as scalar particles denoting the same (basic) operation, and that the differences between them mainly result from differences between the scales they prefer / are compatible with. In particular, we propose the following schematic lexical entry for the three particles:

5(1) kimat / paxot o yoter / be-gadol: λp. |¬p_{dmax}| = T ∧ ∃p’ ∈ S_{ALT}(p_{dmax}) ∧ p’ ≤ S(p_{dmax} ∧ close_S(p’, p_{dmax}) ∧ |p’| = T

Similarly to A&dP’s definition of almost, (5) involves a scale, a polar component and a proximity component. It mainly differs from A&dP’s definition in taking the ‘limit point’ in the scale, to which the polar component applies to, and to which the alternative in the scale is relativized to, to be not necessarily the prejacent p itself, but possibly p interpreted w.r.t. a degree d_{max} – a maximal degree in the relevant scale. Differences between the three particles are now explained as mainly resulting from constraints on the types of scales they operate on.
Accounting for the data In the case of almost our proposal is heavily inspired by previous proposals (in particular Sevi, Penka and A&dP). Following Sevi’s approach we also assume that with almost p’ is the closest alternative below pdmax. In addition we make the novel suggestion that this particle prefers lexically provided scales. This means that whenever the alternatives to p are naturally part of a scale, it is this scale which is being used for the interpretation of the sentence, and pd = p. This is the case, for example, in (2a), which induces a linear scale of propositions with different temporal locations closer and closer to 3p.m. Thus, (2a) asserts indeed that the prejacent is false (John didn’t arrive at 3), and that an alternative close to p and lower than p on the scale is true (e.g. John arrived at 2.55 is true). The definition can be also extended to cover counterfactual uses of almost as in (3) where a similarity relation between worlds (relative to which p is interpreted) dictates the ordering in the scale. E.g. (3) asserts that p is false in w (John didn’t go abroad in w), and that this p is true in a world less similar to w than w itself, but still maximally similar to it. If the interpretation of p itself involves a scale, as with gradable adjectives as in (1) the alternatives in the scale are formed by interpreting p under different degrees. E.g. (1) with almost asserts that the degree to which the room is clean is not maximal, but is lower (and maximally) close to it.

We propose that like almost, paxot o yoter is also scalar, but that unlike it, it can only operate on scales of precision standards. Thus, paxot o yoter p asserts that p interpreted under the maximal (most strict) precision standard is false, and that an alternative, i.e. p interpreted under a lower (more liberal) precision standard, close to that maximal standard, is true. Following the spirit of Lasersohn 1999 and Sauerland & Stateva (2007) and more formally Morzycki (2011) we take (lower) precision standards to be modeled as (larger) sets of alternatives, e.g. |α1| = {α}, |α|0.05 = {α, α’}, |α|0.9 = {α, α’, α’’}, etc. and where |α|d = T if at least one of the alternatives in the set of alternatives it denotes is true. Among other things, this correctly accounts for the following facts: (A) unlike its counterpart with almost, (2b) is not required to involve times lower than 3 on the temporal scale (e.g. 2.55), but rather 3 interpreted with a lower standard of precision than the maximal one, e.g. one of the alternative times in the interval between 2.55 and 3.05. (B) the fact that this interval contains 3 p.m. itself explains the apparent lack of polar component with paxot o yoter and more or less, i.e. the fact that if a listener finds out that John arrives at 3 p.m. sharp she will not consider the sentence false (C) Despite the previous fact, an utterance of (2b), with more or less by a speaker who knows that John arrived at 3 pm sharp, will be considered odd or misleading. The explanation is similar to the derivation of ignorance implicatures with standard disjunctions, as in John has a son or a daughter, in cases where the speaker knows that John has a son. In our case too, the sentence is strictly speaking true (as John arrived at 3 is one of the alternatives in e.g. [John arrived at 3], but the opinionated state of the speaker renders (2b) underinformative. (D) Unlike almost, paxot or yoter does not yet yield counterfactual readings.

Finally, we show that begadol is more flexible than paxot o yoter in that it can involve scales triggered by discourse goals. E.g. in (3) pdmax is understood as either maximal precision standard (as with paxot o yoter) or as the complete answer to the question under discussion. Similarly in (4) pdmax is understood as “I am coming to the party” under maximal commitment of the speaker, so (4) with begadol implicates that the level of commitment is lower than (though still close to) maximal. Like paxot o yoter, though, and unlike kimat it cannot yield counterfactual readings.

Beyond the analysis of these three specific particles, this study has wider implications towards the growing research attempting to classify the core properties and the varying parameters of the range of approximates found in natural languages (for attempts see Saurland & Stateva 2007, Morzycki 2010. Siegel 2002, Zaroukian 2011, Kagan & Spector 2010, etc.)