For overlap processing, we only consider overlaps between adult (Ad) and target child (ChSp or ChNsp) vocalisations. ChSp and ChNsp vocalisations cannot overlap because they are vocal productions from the same source. Therefore, we only have to consider overlap events involving two vocalisations at a time. This means that for a target vocalisation (TV) of a given vocaliser type (either adult or child), vocalisations that overlap with TV *must* be sequential. As such, we can use a recursive algorithm to process overlaps that processes overlaps for each TV one at a time (see `DetectOverlap.m`, `GetNonOverlapVocs.m`, and `A1_IdOverlapAndFilesWErrors.m`).

Given this, there are only three cases of an overlap:

1. A vocalisation completely overlaps TV (orange double lines in the schematic in the next slide),
2. A vocalisation starts within (or at the same start time as) TV (green line in the schematic), or
3. A vocalisation ends within (or at the same end time as) TV (blue solid line in the schematic).

The schematic in the next slide breaks down these cases to show that when considering a single overlap event, we can separate all possible cases encompassed by the three possibilities above into four broad classes:

a. Complete overlap (orange, double lines in the schematic in the next slide)

   Requires TV to be completely flagged as overlap and removed.

b. A vocalisation starts within TV, i.e., the start time of the overlapping vocalisation is *after* the start time of TV (green dotted line in the schematic)

   Requires TV to be chopped up into the non-overlapping portion up to the start of the overlapping vocalisation and the overlapping portion starting at the start time of the overlapping vocalisation.

c. A vocalisation starts at the same time as TV and ends within TV (green dashed line in the schematic)

   Requires TV to be chopped up into the overlapping portion up to the end of the overlapping vocalisation and the non-overlapping portion starting at the end time of the overlapping vocalisation.

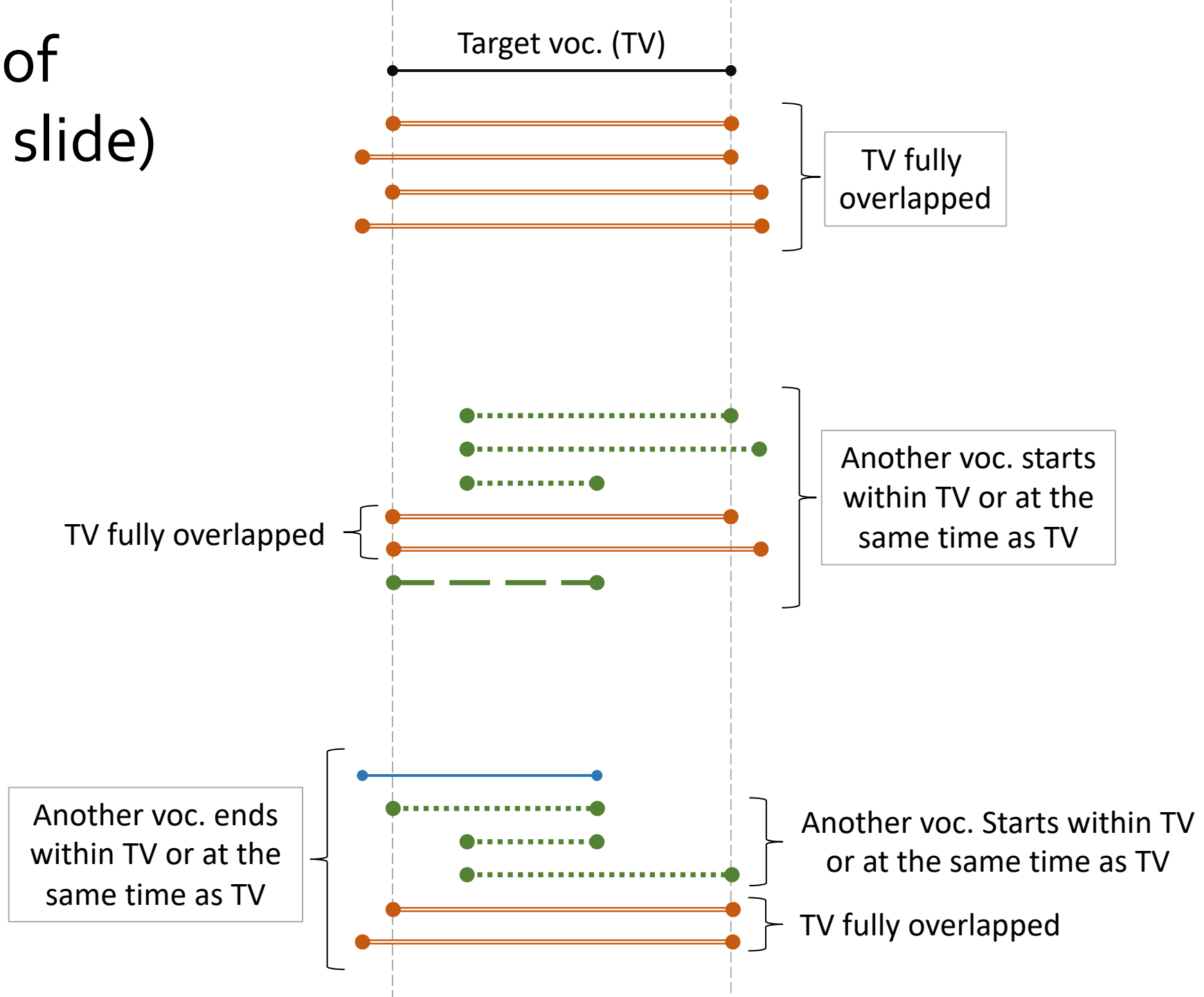
d. A vocalisation ends within TV (but starts before TV) (blue solid line in the schematic)

   Requires TV to be chopped up into the overlapping portion up to the end of the overlapping vocalisation and the non-overlapping portion starting at the end time of the overlapping vocalisation.

The explanatory text here and accompanying schematic(s) are intended to be a companion infographic for the scripts `DetectOverlap.m`, `GetNonOverlapVocs.m`, and `A1_IdOverlapAndFilesWErrors.m`. in the same GitHub repo this .pptx is in.

Please note that while cases of multiple overlap events are possible for the same TV, we treat overlaps for a given TV one at a time, and the schematic(s) presented in this .pptx outlines the logic that goes into the scripts that do the overlap processing.

Broad classes of overlap (see prev. slide)



Overlap processing