Evidence suggests that speakers can take account of the addressee’s needs when referring. However, what representations drive the speaker’s audience design has been less clear. The current study thus aims to go beyond previous studies by investigating the interplay between the visual and linguistic context during audience design.

For an entity to be identified as a firefighter, speakers must identify the referent’s attributes associated with the meaning of the word (or lexical concept) FIREFIGHTER. As illustrated in Fig.1, speakers may refer to a person as firefighter when he was identified as firefighter in the preceding linguistic context. But they may also identify a person as a firefighter if he has visible attributes associated with the role, e.g., wearing a firefighter uniform. How do speakers use these different contextual cues to assist their addressee?

Fig.1: Linkage between the referent and the lexical concept of the referring expression.

According to some models of audience design (e.g., Clark & Wilkes-Gibbs, 1986), speakers choose descriptions established with their partner in previous conversations. Crucially, this effect, known as lexical entrainment (Garrod & Anderson, 1987), appears to be person-specific – when speaking to a new addressee, speakers tend to modify or abandon those descriptions used with the previous addressee, possibly to seek a new conceptual pact (Brennan & Clark, 1996). In Brennan and Clark, speakers avoided subordinate descriptions (loafer for a shoe) for a new addressee, even though the descriptions would have identified the referent without prior mention. One possibility is that speakers repeat a particular expression (e.g., FIREFIGHTER) more when the addressee also heard its prior mention than not, irrespective of whether the visual context provides cues for identification.

However, speakers may not simply rely upon shared linguistic experience during audience design; they can take account of the referent’s attributes in the linguistic as well as visual context. If the referent is in a firefighter uniform, speakers may frequently say FIREFIGHTER, regardless of whether the addressee has also heard prior mention of the word, because the person’s visual feature, being in a firefighter-uniform, makes him the plausible referent. However, when the referent has no such visible attributes, the availability of the linguistic antecedent to the addressee may strongly influence the speaker’s repetition of the antecedent; if the referent lacks the relevant visual feature and the addressee does not know the referent’s identity, there will be no salient feature that links the referent to lexical concept FIREFIGHTER.
The above predictions assume that speakers are cooperative when referring. But many studies have shown that speakers can be egocentric during referential communication (e.g., Bard & Aylett, 2005; Horton & Keysar, 1996). Specifically, Fukumura and Van Gompel (2012) showed that speakers produce pronouns (e.g., he or she) more frequently when the referent is accessible to them, regardless of how accessible it is to their addressee, contrary to the widely-held assumption that speakers take the addressee’s discourse model into account when choosing referring expressions (e.g., Ariel, 1990).

The second goal of the current study is thus to investigate if pronoun use is affected by audience design under different circumstances. Filik, Sanford, and Leuthold (2008) found that pronouns without linguistic antecedents immediately disrupt comprehension processes. Do speakers avoid such pronouns for their addressee?

After listening to a sentence (1), speakers referred to a character introduced in the sentence when describing his action depicted in a picture to an addressee (bottom panel in Fig.2). The addressee couldn’t see the picture and had to act out the speaker’s description using the toys. The addressee either heard sentence (1) (shared) or not (privileged), and the referent either possessed visual attributes associated with the noun (firefighter) mentioned in the sentence (Fig.2A) or not (Fig.2B). Speakers typically described the example stimuli as (2)

(1) The firefighter was visiting the school.
(2) The firefighter/the man/he raised his arm.

Fig.2. Example stimuli.

Fig.3 presents the results. Speakers repeated subordinate antecedents less when the antecedents were not shared with their addressee than when they were. Also, speakers used fewer subordinate antecedents for referents without relevant visible attributes than for referents with visible attributes. Importantly, the effect of shared linguistic antecedents was found only for referents without visible attributes. When the visual context provided relevant cues for identification, speakers frequently repeated subordinate antecedents, regardless of whether the addressee also heard the antecedent. This indicates that speakers use linguistic as well as visual attributes to facilitate the word-referent mapping for the addressee. Furthermore, speakers produced fewer pronouns and hence more explicit expressions when addressees did not hear the antecedent than when they did, suggesting that they avoided pronouns when their addressee did not hear the linguistic antecedents.
In sum, the study shed new light on the interface between the shared linguistic context and the referent’s visual properties, demonstrating how flexibly speakers use different contextual cues to facilitate the word-referent mapping for their addressee. We also showed that speakers can use pronouns cooperatively during initial mention.

References


For further detail, please refer to Fukumura (in press, Cognitive Science), Interface of linguistic and visual information during audience design.