Research shows that children get bitten at least twice as often as adults and children under 7 are at a significantly higher risk (Kahn et al., 2003; Kahn et al., 2004). It has recently been estimated that as many as 47% of children are bitten by a dog in their school years (Beck & Jones, 1985; Spiegel, 2000). Lakestani (2006) found that children do not look at the body language of dogs, but pay attention to the face instead. Recently, it was found that children do indeed misinterpret angry dog facial expressions as smiling and being happy (Meints, Racca & Hickey, in prep.). In investigating children’s scanning patterns of human and dog faces we examined whether children’s misinterpretations are due to a partial scan path on dogs angry faces as opposed to full scan paths including eyes, nose and mouth in human faces or other dog faces. With new technology, Intermodal Preferential Looking in combination with mobile eye-tracking (Meints & Woodford, 2008), we investigated children’s looking preferences. We found that children’s scan pattern deviates for aggressive dog faces. Children do not show the typical eye-nose-mouth scan pattern that they show for other faces, but instead, show a significantly different scan pattern which mainly focuses on the dogs mouth and teeth area. These results are an important step forward in recognising why children misinterpret dogs facial information. Implementation of this insight into prevention messages and programmes can now be attained.