




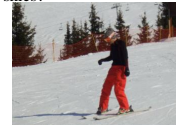

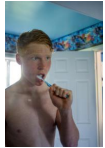
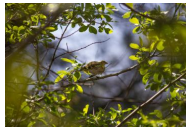


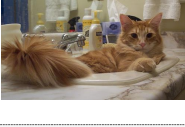








<p>Are there any other people?</p>  <p><b>Primary</b></p> <p>A1:No A2:<b>No, just her and the bird</b> A3:No, just the woman and the baby that she's holding A4:Just her A5:Not that I can see</p>	<p><b>Synergistic</b></p> <p>A1:<b>No, just her and the bird</b> A2:No A3:Just her A4:No, just the 1 A5:Not that I can see</p>	<p>Is it daytime?</p>  <p><b>Primary</b></p> <p>A1:Yes A2:Can't tell, the photo is taken indoors A3:Unsure, because the photo is inside A4:Hard to tell with indoor light</p>	<p><b>Synergistic</b></p> <p>A1:Yes daytime A2:Yes, daytime A3:<b>Yes, it is daytime</b> A4:Yes</p>
<p>Can you see any animals?</p>  <p><b>Primary</b></p> <p>A1:No, no animals A2:<b>Yes, I can see a bird</b> A3:No A4:No I can't A5:No, I can't</p>	<p><b>Synergistic</b></p> <p>A1:<b>Yes, I can see a bird</b> A2:No, no animals A3:No, just the boats A4:No A5:No I can't</p>	<p>What color is the person's skies?</p>  <p><b>Primary</b></p> <p>A1:Red A2:You can't see it A3:Black A4:<b>White</b> A5:I cannot tell</p>	<p><b>Synergistic</b></p> <p>A1:<b>White</b> A2:Red A3:You can't see it A4:Black A5:I cannot tell</p>
<p>Are there any towels on the towel rack?</p>  <p><b>Primary</b></p> <p>A1:No A2:1 round soap A3:<b>No, but a black bag is</b> A4:No, glass A5:No, 0</p>	<p><b>Synergistic</b></p> <p>A1:<b>No, but a black bag is</b> A2:No A3:There is a blue basket A4:1 round soap A5:No just 1</p>	<p>Can you only see his face?</p>  <p><b>Primary</b></p> <p>A1:Yes A2:Yes! A3:Yes the back of it A4:<b>His face and his chest are visible</b> A5:Yup</p>	<p><b>Synergistic</b></p> <p>A1:<b>His face and his chest are visible</b> A2:Yes! A3:Yes A4:Yes the back of it A5:Yup</p>
<p>Is it sunny out?</p>  <p><b>Primary</b></p> <p>A1:Yes A2:Poor bear indeed it is daytime A3:It is hard to tell A4:I believe so A5:Appears to be a nice day</p>	<p><b>Synergistic</b></p> <p>A1:Yes A2:<b>I think so, but the sky is blurry in the background</b> A3:It is hard to tell A4:Yes, it is A5:Yes it is</p>	<p>Does it (refrigerator) have rounded edges or square?</p>  <p><b>Primary</b></p> <p>A1:Square with rounded ends A2:Rectangle A3:Round A4:<b>Rounded</b> A5:Thick</p>	<p><b>Synergistic</b></p> <p>A1:<b>Rounded</b> A2:Rectangle A3:Round A4:Square with rounded ends A5:Can't tell</p>
<p>Do you know the type?</p>  <p><b>Primary</b></p> <p>A1:No A2:Some of the top, middle and space key A3:Not really A4:Coca cola A5:Yes</p>	<p><b>Synergistic</b></p> <p>A1:<b>1 fern and 1 hosta</b> A2:No A3:Yes A4:Some of the top, middle and space key A5:Not really</p>	<p>Does it have long hair?</p>  <p><b>Primary</b></p> <p>A1:No, very short hair A2:No A3:Short hair A4:Long hair A5:No, she has very short hair</p>	<p><b>Synergistic</b></p> <p>A1:No, very short hair A2:No, she has very short hair A3:<b>Short hair but the tail is very puffy with long fur</b> A4:Yes</p>
<p>Where is the boat located?</p>  <p><b>Primary</b></p> <p>A1:At the balcony A2:<b>On the shore</b> A3:In the train station A4:On the side of the road A5:To the right</p>	<p><b>Synergistic</b></p> <p>A1:<b>On the shore</b> A2:At the balcony A3:Standing in the water A4:To the right A5:On the side of road</p>	<p>Is it Sunny?</p>  <p><b>Primary</b></p> <p>A1:I don't know it is indoors A2:Yes A3:Can't tell A4:No A5:It's bright in the photo</p>	<p><b>Synergistic</b></p> <p>A1:<b>Yes, sunny over the bowls</b> A2:I don't know it is indoors A3:Yes A4:Can't tell A5:It's bright in the photo</p>
<p>Is this in a restaurant?</p>  <p><b>Primary</b></p> <p>A1:Yes A2:Yes, I believe it is A3:I think so A4:Yes it is A5:Yes, it is</p>	<p><b>Synergistic</b></p> <p>A1:Yes A2:<b>Looks like a wine shop</b> A3:No A4:Yes it is A5:Yes, it is</p>	<p>Can you see the horizon line or the sky?</p>  <p><b>Primary</b></p> <p>A1:I cannot see the sky A2:Can't see A3:I can see the sky, no clouds A4:<b>No, just the ocean</b> A5:No, the sky is not visible</p>	<p><b>Synergistic</b></p> <p>A1:<b>No, just the ocean</b> A2:No, A3:No A4:No mountains can be seen A5:No, the sky is not visible</p>
<p>Anything else in the image other than 3 people, dog and cattle?</p>  <p><b>Primary</b></p> <p>A1:Yes, but also there appears to be possibly... A2:The rest of the baseball field and the fence A3:<b>Rocks, and grass mainly</b></p>	<p><b>Synergistic</b></p> <p>A1:<b>Rocks, and grass mainly</b> A2:No A3:Yes A4:The rest of the baseball field and the fence</p>	<p>Are they talking?</p>  <p><b>Primary</b></p> <p>A1:No, just looking at their phones A2:No A3:Yes, the most prominent 1 is taking a photo</p>	<p><b>Synergistic</b></p> <p>A1:<b>I can't see their faces, but I would guess no</b> A2:No A3:No, just looking at their phones</p>
<p>Is the plate white?</p>  <p><b>Primary</b></p> <p>A1:Yes, it is a black coffee A2:No it is white A3:<b>Yes</b> A4:Yes, it is A5:Yes it is</p>	<p><b>Synergistic</b></p> <p>A1:<b>Yes</b> A2:No it is white A3:Yes, it is a black coffee A4:Yes it is A5:Yes, it is</p>	<p>Are there any pictures on the sign?</p>  <p><b>Primary</b></p> <p>A1:Yes, there is 1 advertisement A2:Yes, 'go exit' is the words written on it A3:<b>No, it is a street name sign</b></p>	<p><b>Synergistic</b></p> <p>A1:<b>No, it is a street name sign</b> A2:Yes, 'go exit' is the words written on it A3:Yes, there is 1 advertisement</p>

Figure 1. Qualitative results for our discriminative model.











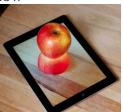





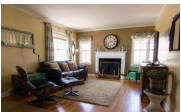

<p>Q:Does she have shoes on? A:Yes, flip fops</p> 	<p><b>Primary</b></p> <p>A1:Yes she does A2:No she is barefoot A3:No she does not A4:Yes she has shoes on A5:I can't see her feet</p>	<p><b>Synergistic</b></p> <p>A1:Yes she has on flip fops A2:No she has sandals on A3:Yes she has shoes on A4:No she has shoes on A5:Yes she does</p>
<p>Q:What color is the table? A:Black and silver</p> 	<p><b>Primary</b></p> <p>A1:Black A2:White A3:Silver A4:Black and silver A5:Gray</p>	<p><b>Synergistic</b></p> <p>A1:Black and silver A2:Silver and black A3:Black A4:Silver A5:Black and gray</p>
<p>Q:What color is the tablet? A:Black and silver</p> 	<p><b>Primary</b></p> <p>A1:Black A2:White A3:Silver A4:Black and silver A5:Gray</p>	<p><b>Synergistic</b></p> <p>A1:Black and silver A2:Silver and black A3:Black A4:Silver A5:Black and gray</p>
<p>Q:Are there any people? A:No, close up picture</p> 	<p><b>Primary</b></p> <p>A1:No A2:0 A3:No people A4:Not that I can see A5:Nope</p>	<p><b>Synergistic</b></p> <p>A1:No A2:No it's a close up A3:No it's a close up of the plate A4:No just a close up of the food</p>
<p>Q:Are there houses? A:There are not</p> 	<p><b>Primary</b></p> <p>A1:No A2:I do not see any A3:Not that I can see A4:Yes A5:There are buildings in the background</p>	<p><b>Synergistic</b></p> <p>A1:There are buildings but no houses A2:I do not see any houses A3:No there are not A4:There are buildings in the background</p>
<p>Q:Is it rough on the water? A:Looks like it might be</p> 	<p><b>Primary</b></p> <p>A1:Yes A2:Yes it is A3:Yes very A4:No A5:No it is not</p>	<p><b>Synergistic</b></p> <p>A1:Yes it looks pretty rough A2:No it is dry A3:Yes it looks pretty calm A4:Yes A5:No it is not</p>
<p>Q:Is the house wearing a saddle? A:I think so really dark</p> 	<p><b>Primary</b></p> <p>A1:Yes A2:No A3:Yes it is A4:I can't tell A5:No saddle</p>	<p><b>Synergistic</b></p> <p>A1:I think so but it's hard to tell because it's a black and white photo A2:Yes A3:No A4:No saddle</p>
<p>Q:Are there houses? A:There are not</p> 	<p><b>Primary</b></p> <p>A1:No A2:I do not see any A3:Not that I can see A4:Yes A5:There are buildings in the background</p>	<p><b>Synergistic</b></p> <p>A1:There are buildings but no houses A2:I do not see any houses A3:No there are not A4:There are buildings in the background</p>
<p>Q:Are the bikes different colors? A:No</p> 	<p><b>Primary</b></p> <p>A1:Yes A2:No A3:Not really A4:Different colors A5:Can't tell</p>	<p><b>Synergistic</b></p> <p>A1:The photo is in black and white A2:Can't tell the photo is in black and white A3:Yes A4:No</p>
<p>Q:What color is the tennis court? A:Green</p> 	<p><b>Primary</b></p> <p>A1:Green A2:Green and red A3:Green and white A4:Gray A5:Red and white</p>	<p><b>Synergistic</b></p> <p>A1:Green with white lines A2:Green and black A3:Green A4:Green and white A5:Blue and green</p>
<p>Q:What color is the apple? A:Mostly red with some yellow</p> 	<p><b>Primary</b></p> <p>A1:Red A2:Red and yellow A3:Red and green A4:Green A5:Pale Yellow</p>	<p><b>Synergistic</b></p> <p>A1:Red with a little bit of yellow A2:Red with a little bit of green A3:Red A4:Bright Red</p>
<p>Q:Does the bike have a basket? A:No</p> 	<p><b>Primary</b></p> <p>A1:No A2:Yes A3:Not that I can see A4:Nope A5:No basket</p>	<p><b>Synergistic</b></p> <p>A1:No but there is a basket on the back of the bike A2:No there is no basket A3:No A4:No basket A5:Yes</p>
<p>Q:How many players are there? A:I see 2</p> 	<p><b>Primary</b></p> <p>A1:2 A2:3 A3:4 A4:I see 3 A5:I see 3 players</p>	<p><b>Synergistic</b></p> <p>A1:2 on the field and a few in the dugout A2:2 on the field and a few in the stands A3:2 on the field and 2 in the dugout</p>
<p>Q:Can you see any signs? A:Yes, a stop sign and a railroad crossing sign</p> 	<p><b>Primary</b></p> <p>A1:Yes A2:Yes there are 2 street signs A3:Yes there is a stop sign A4:Yes a stop sign A5:Yes 2 street signs</p>	<p><b>Synergistic</b></p> <p>A1:Yes there are 2 street signs and 1 stop sign A2:Yes there are 2 street signs and a stop sign A3:Yes a stop sign and a street sign</p>
<p>Q:Is there anything in the sky? A:Clouds</p> 	<p><b>Primary</b></p> <p>A1:No A2:Not that I can see A3:A few clouds A4:Some clouds A5:Nothing</p>	<p><b>Synergistic</b></p> <p>A1:Just a lot of clouds A2:Just a bunch of clouds A3:Just a few clouds A4:Some clouds A5:No</p>
<p>Q:Is the person old or young? A:I can't really see them</p> 	<p><b>Primary</b></p> <p>A1:Young A2:Older A3:Middle aged A4:Old A5:I can't tell</p>	<p><b>Synergistic</b></p> <p>A1:I can only see the back of their heads so I can't tell A2:I can only see his back so I can't tell A3:Young A4:Looks young</p>
<p>Q:What kind of flooring is it? A:Hardwood</p> 	<p><b>Primary</b></p> <p>A1:Wood flooring A2:Hardwood flooring A3:Hardwood A4:Wood flooring with a large rug</p>	<p><b>Synergistic</b></p> <p>A1:It's hardwood flooring with a large rug over it A2:Hardwood flooring with a large rug over it A3:Hardwood flooring with a large rug</p>
<p>Q:Is the bear wearing any clothes? A:Yes, a tie</p> 	<p><b>Primary</b></p> <p>A1:No A2:Yes A3:A scarf A4:Yes a bow tie A5:Just a bow tie</p>	<p><b>Synergistic</b></p> <p>A1:Just a ribbon around his neck A2:The bear is wearing a bow tie A3:A scarf around his neck A4:Yes a bow tie A5:Just a ribbon</p>

Figure 2. Qualitative results for our generative model without candidate answers.