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## Action Unit Combination 1+2+4

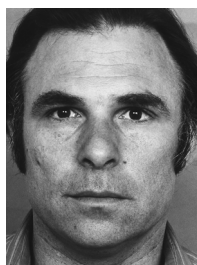
### A. Appearance Changes due to AU Combination 1+2+4

This combination of AUs pulls the brows upwards and together, but neither of these changes is as large as is found separately with AU 4 alone or with the AU 1+2 combination. The changes in appearance in 1+2+4 are not simply the addition of those for the separate AUs, but are a new, somewhat different product of their joint action.

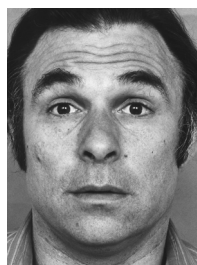
1. Pulls the entire brow (medial to lateral) upwards, but not as much as due to 1+2 alone because AU 4 pulls down on the brow.
2. Pulls the eyebrows together, but not as close together as in AU 4 alone. Compare images of 1+2+4 with those of 4. Note also that the eyebrows are closer together in 1+2+4ii, where there is more action of AU 4, than in 1+2+4i. Compare both with 1+2. Even in 1+2+4i, there is evidence that the eyebrows are pulled towards each other.
3. Flattens the shape of the eyebrow between the inner corner and the middle portion of the eyebrow. In some people (j1+2+4) there may be a small downward curve in between these two points. Usually the outer corners of the brows are level with the inner corners, or if lower than the inner corner, the outer corners are up sufficiently to expose the lateral portion of the upper eyelid. (Compare j1+2+4 with j1+4.)
4. Bunches the skin in the central portion of the forehead so that horizontal wrinkles or wrinkles that show a little upward curve appear in the center of the forehead. These wrinkles may not appear in infants, children and some adults.
5. May cause an oblique wrinkle line or muscle bunching to appear following the pathway of one of the strands of AU 4. This wrinkle runs from the inner corner of the eyebrow, up and outwards to a point in the forehead above the middle of the eyebrows. This is more apparent in 1+2+4ii than 1+2+4i.

Inspect the images and video of 1+2+4.

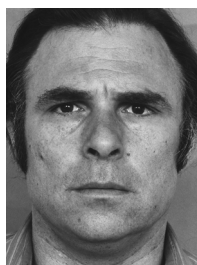
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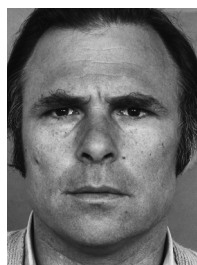
0 [page 465](#)  
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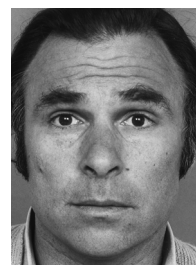
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[page 387](#) for score



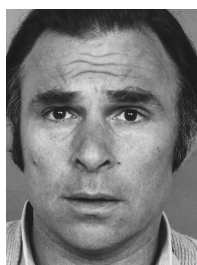
4i [page 466](#)  
[page 382](#) for score



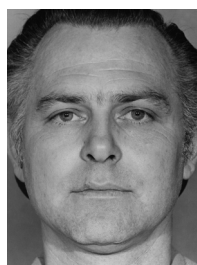
4ii [page 466](#)  
[page 382](#) for score



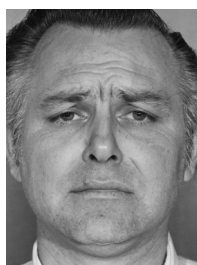
1+2+4i [page 472](#)  
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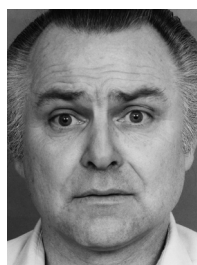
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video 1+2+4  
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## B. How to do AU Combination 1+2+4

This is a difficult combination for most people to make. First, try the 1+2 action, which is easy. Let that go and try the 4 action, which is also easy. The instructions for these actions are repeated below. Now try both at once.

**AU Combination 1+2** (repeated from [page 54](#)): This behavior should be easy for you to do. Simply lift your eyebrows up, both ends as high as you can. Note the wrinkling in your forehead. In some people the wrinkling does not occur but the skin is still bunched up. In some people these wrinkles are permanently etched (see 0 and w0) but they deepen noticeably when 1+2 acts. Suppress any tendency you may also have to lift your upper eyelid (AU 5) when performing 1+2.

**AU 4** (repeated from [page 18](#)): This movement is easy for most people to do. Lower your eyebrows and pull them together. Try not to wrinkle your nose (if your nose is wrinkling, you are doing AU 9). If you are unable to make this movement so it looks like 4i or 4ii, turn to the description of AU 9 on [page 93](#). Make the nose wrinkling movement of AU 9, and watch what happens to your eyebrows. Notice that they come down and together. Now try to move your eyebrows without moving AU 9. Alternatively, imagine yourself puzzled with a problem that you can't figure out; you may make AU 4. If you are still unable to make this movement, use your fingers to push the skin on your face so you look like 4ii. Then try to hold that appearance when you take your fingers away.

If you don't succeed try the following:

- Make the 1+2 action, holding it on your face, then add in the 4.
- Make the 4 action, holding it on your face, then try to add in the 1+2.
- Make the 1+2 action, and use your finger-tips to push the inner corners of the eyebrows together. Note the change in appearance that occurs. Try to hold this appearance when you take your fingers away.

## C. Intensity Scoring for AU Combination 1+2+4

The intensity criteria for AUs 1, 2, or 1+2, and 4 are altered significantly from their separate descriptions. Do not use Section C for AUs 1, 2, 1+2, or 4; you must use the criteria listed below for the total configuration 1+2+4. For the example intensity criteria listed below, the component AUs are given the same intensity, but of course, any combination of intensities can be scored for the AUs. To determine the separate intensities, you need to evaluate the relative magnitudes and contributions of the separate AUs in the action you score against the criteria listed below. For example, if you see a 1+2+4 in which the contribution of AUs 1+2 is at the B level, but the contribution of AU 4 is more than described for the 1B+2B+4B combination below, you might score 1B+2B+4C, and so forth.

### AU 1A+2A+4A in AU Combination 1+2+4

The appearance changes for AUs 1+2+4 are sufficiently present to indicate AU 1+2+4, but are insufficient to score 1B+2B+4B (e.g., a *trace* of brow raising and a *trace* of pulling together in a straight rather than arched shape).

### AU 1B+2B+4B in AU Combination 1+2+4

1. Entire brow raised *slightly*, and pulled together *slightly*. Because AU 4 pulls down against the raise of 1+2, the eyebrow may not be raised very high.  
and
2. The eyebrows appear more straightened than arched (arched if only 1+2, but the addition of AU 4 pulling them together straightens them); or, there is a small downward curve between the inner and middle portion of the brow.

### AU 1C+2C+4C in AU Combination 1+2+4

The brow raising and pulling together is *marked* and the straightening is apparent, but the evidence is less than the criteria for the D levels of these actions combined.

### **AU 1D+2D+4D in AU Combination 1+2+4**

The brow raising and pulling together is *severe* and the straightening is apparent, but the evidence is less than the criteria for the E levels of these actions combined.

### **AU 1E+2E+4E in AU Combination 1+2+4**

The brow raising and pulling together is *maximum* and the straightening is apparent.

Often it is difficult to determine if it is 1+2 or 1+2+4, whether it is 1+4 or 1+2+4, or occasionally whether it is 2+4 or 1+2+4. If you are having difficulty determining if 1 and 2 have occurred, use the following steps.

First, determine if AU 4 has acted. There must be evidence that the eyebrows have been pulled together and the position of the eyebrows is sufficient evidence. The following cues may also be helpful, but not required:

- wrinkle or muscle bulge between eyebrows.
- wrinkle or muscle bulge running down from the forehead above the eyebrow to the middle to inner portion of the eyebrow.

Second, determine if AU 1 has acted. There must be evidence that the inner portion of the eyebrows have been raised and the raised position of the brow is sufficient. Usual, but not required, is the presence of horizontal wrinkles confined to the middle portion of the forehead.

Finally, there must be evidence that the lifting action of AU 2 has occurred. If you have determined that AU 4 has acted, you must expect that the lifting of AU 2 may not be as evident in the position of the brow, as AU 4 tends to lower the brow. The following cues that the lateral portion of the brow has been raised should be helpful, but not required:

- increased exposure of the outer portion of the upper eyelid. If not increased, the lateral, upper eyelid exposure is as much as it is in neutral.
- increased exposure of the outer portion of the upper eyelid cover fold or at least as exposed as in neutral.
- short horizontal wrinkles above the outer portion of the eyebrow that are not continuous with the wrinkles caused by AU 1. These lateral wrinkles may be completely disconnected from the wrinkles in the middle portion of the forehead, or the horizontal wrinkles often observed with 1+2 have been disrupted into an irregular pattern by the oblique wrinkle or muscle bulge described as a cue of AU 4.

Use the guidelines that are provided above to determine how 1+2+4i, 1+2+4ii, and j1+2+4 met the criteria above for scoring their assigned levels of intensity.