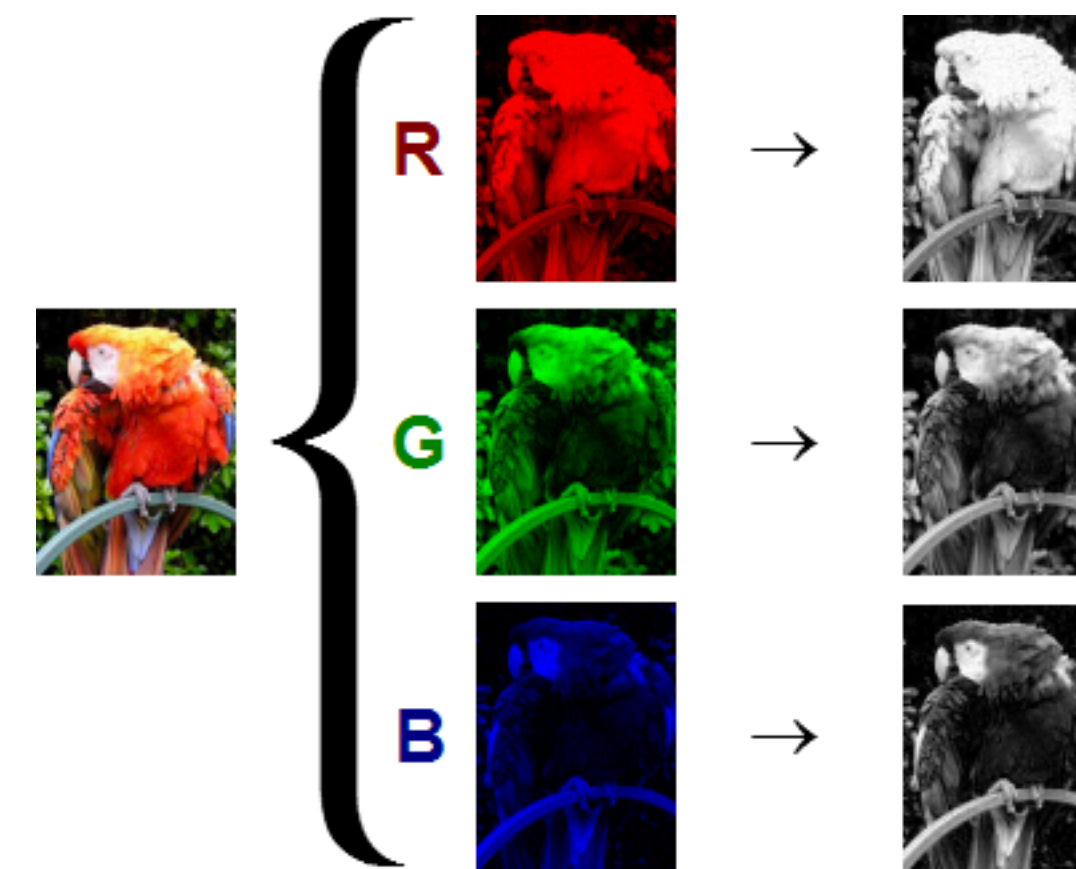# Image data
Representing coloured images

- Similarly, coloured images can be represented by decomposing the Red/Green/Blue light intensity

  - Extract the RGB channel light intensity as three individual 2-dimensional array

  - Concatenate the three arrays into a 3D dimensional array, with the third dimension representing the RGB channels
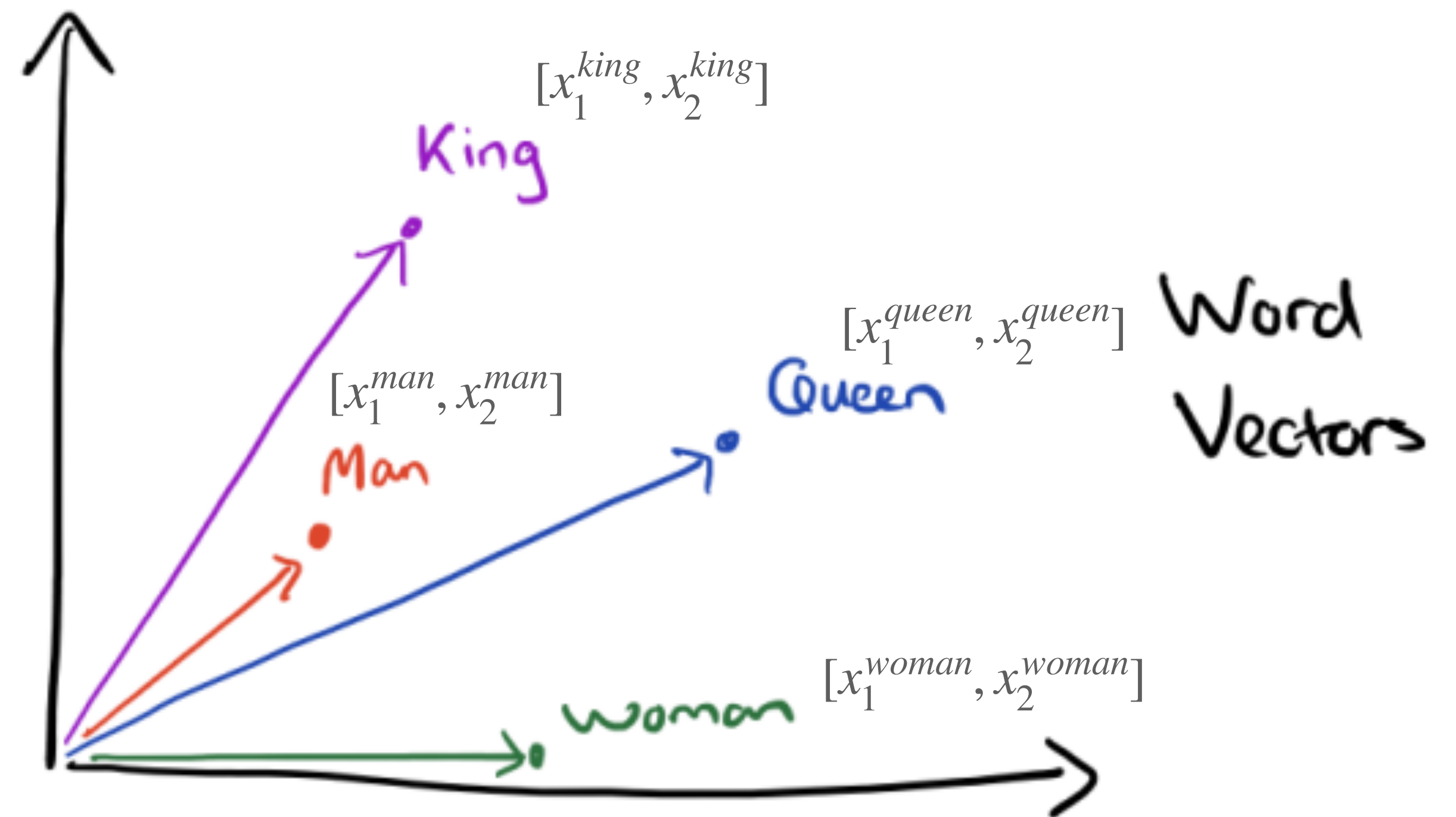

https://upload.wikimedia.org/wikipedia/commons/5/56/RGB_channels_separation.png

Language data
Representing words

- Words can be represented as *n*-dimensional vectors (eg. 2-dimensional vector of $[x_1, x_2]$)

- Vectors preserve "word-to-word" relationships

- $v^{king} - v^{queen} \approx v^{man} - v^{woman}$

$[x_1^{king}, x_2^{king}]$

King

$[x_1^{queen}, x_2^{queen}]$ Word

$[x_1^{man}, x_2^{man}]$

Man Queen Vectors

$[x_1^{woman}, x_2^{woman}]$

Woman

https://www.depends-on-the-definition.com/guide-to-word-vectors-with-gensim-and-keras/