

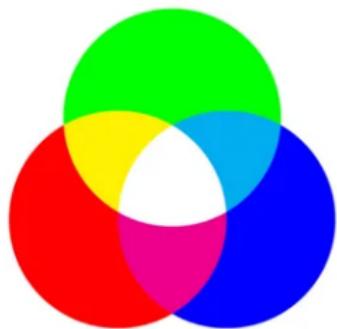
Explain the CMYK model. Exemplify the reflection of colors. Explain the principles of halftoning. Why is K used in CMYK model in practice, while it is enough to have CMY to simulate any color?

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Modèles de couleur

RGB

The RGB Color System is Additive



Used for Digital and Web Media



CMYK

The CMYK Color System is Subtractive



Used for Print Media



Figure 1: Source: color-meanings.com

CMY vs CMYK: qu'est ce que le K ?

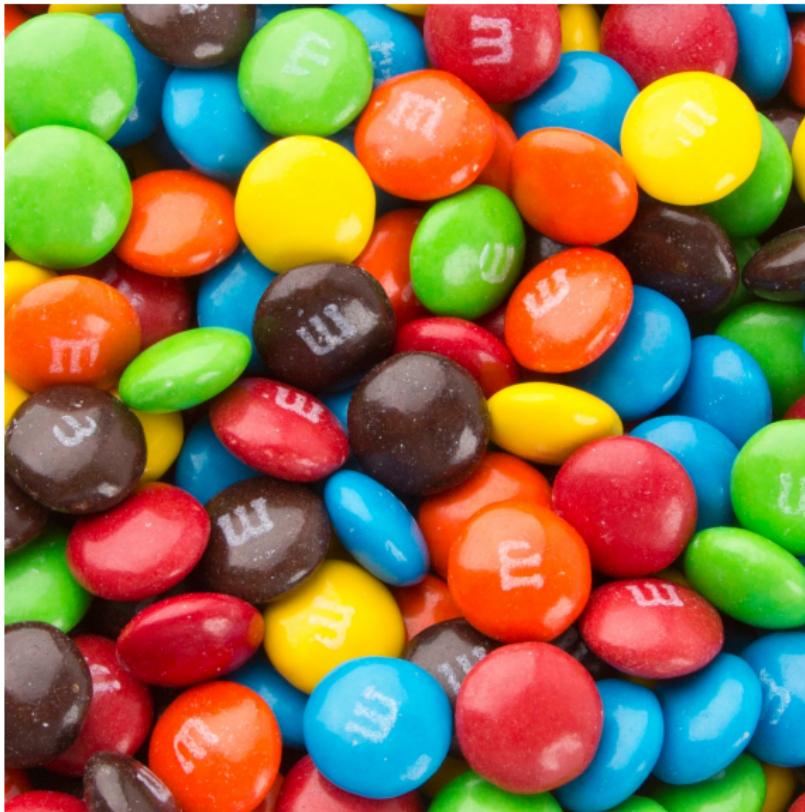
K: $\min(C; M; Y)$

C = C - K

M = M - K

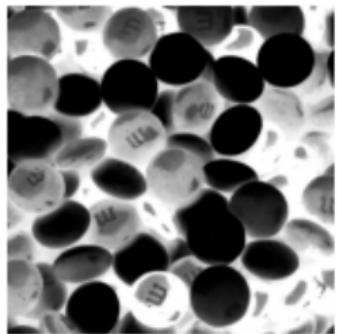
Y = Y - K

CMY vs CMYK visuellement

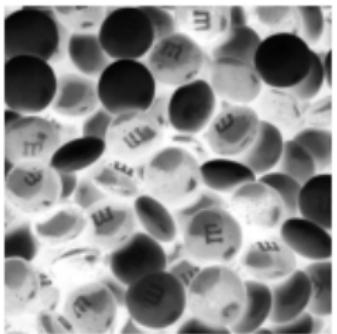


CMY vs CMYK visuellement

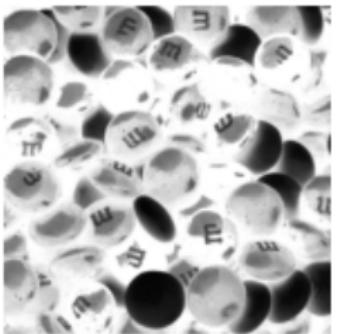
C



M

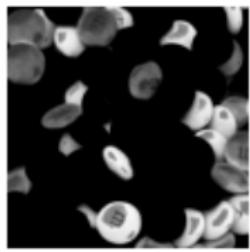


Y

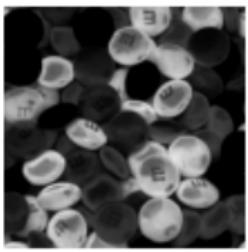


CMY vs CMYK visuellement

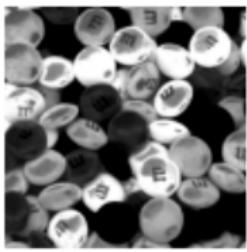
C



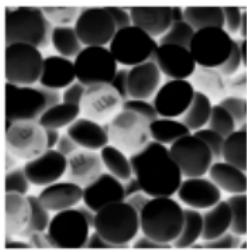
M



Y



K



Halftoning

- ▶ Une seule encre est utilisée
- ▶ L'écartement entre les points varie
- ▶ La taille des points varie

Halftoning: exemple

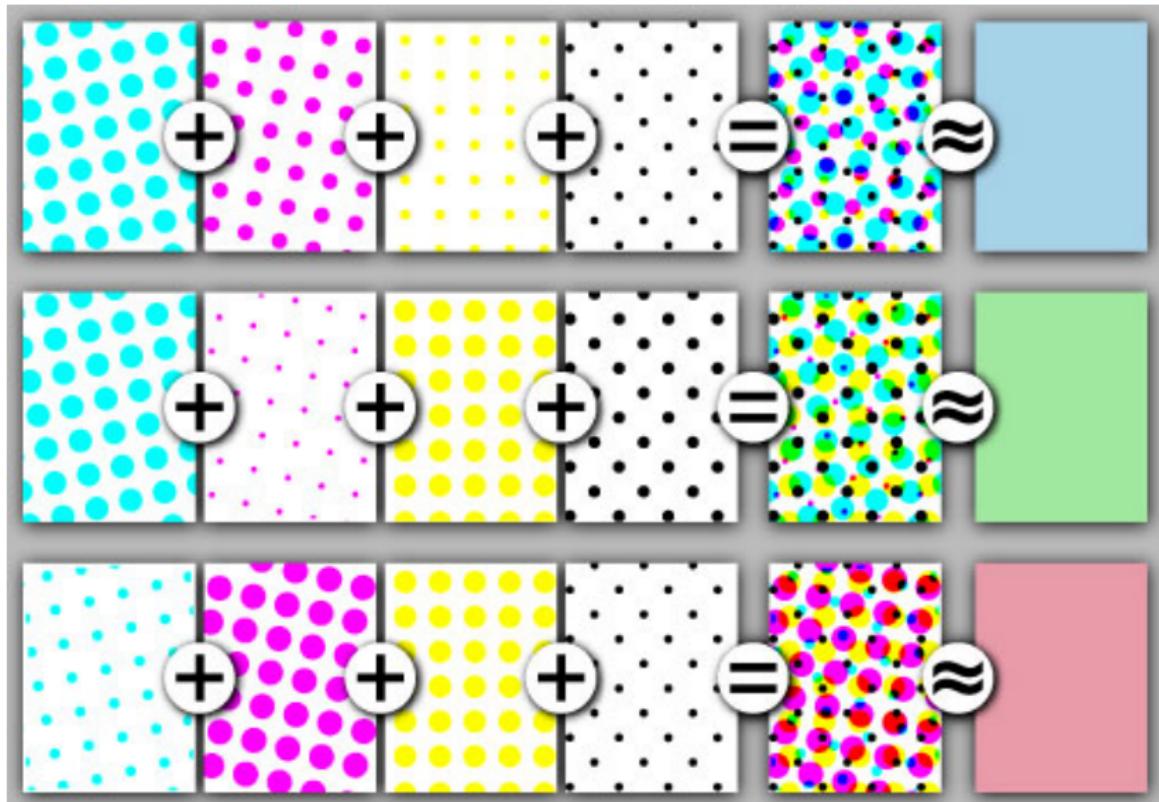


Figure 2: Wikipedia

Utilisation de K: raisons

- ▶ économiques (+ chère de faire un mélange)
- ▶ pratique (imprime beaucoup de noir & papier avec mélange est plus mouillé...)
- ▶ visuelle (noir obtenu par mélange n'est pas parfait)