# Color fonts

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A recent new (and evolving) addition to OPENTYPE is colored glyphs. One variant (by MICROSOFT) uses overlays and this method is quite efficient.

```
\definefontfeature[colored][colr=yes]
\definefontsynonym[Emoji][file:seguiemj.ttf*default,colored]

\definesymbol[bug][\getglyphdirect{Emoji}{\char"1F41B}]
\definesymbol[ant][\getglyphdirect{Emoji}{\char"1F41C}]
\definesymbol[bee][\getglyphdirect{Emoji}{\char"1F41D}]
```

Here we see a 🐛, 🐜 and 🐝, and they come in color! Once UNICODE started adding such symbols (and more get added) the distinction between characters and symbols get even fuzzier. Of course one can argue that we communicate in pictograms but even then, given that mankind lasts a while, the UNICODE repertoire will explode.
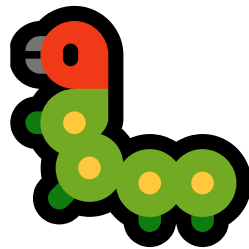
U+1F41B: bug   U+1F41C: ant   U+1F41D: bee

Figure 1: A few emojis from `seguiemj.ttf`

Here we use `seguiemj.ttf`, a font that comes with MS WINDOWS. Colors are achieved by combining glyphs rendered in different colors. A variant that uses SVG instead of overlays is `emojionecolor-svginot.ttf`:

```
\definefontfeature[svg][svg=yes]
\definefontsynonym[Emoji][file:emojionecolor-svginot.ttf*default,svg]
```

This time we get 🐛, 🐜 and 🐝 and they look quite different. Both fonts also have ligatures and you can wonder what sense that makes. It makes it impossible to swap fonts and as there is no standard one never knows what to expect.
How do we know what faces add up to the ligature 👪 and how are we supposed to know that there should `zwj` in between? When we input four faces separated by zero width joiners, we get a four face symbol instead. The reason for having the joiners in between is probably to avoid unexpected ligatures. The sequence man, woman, boy,
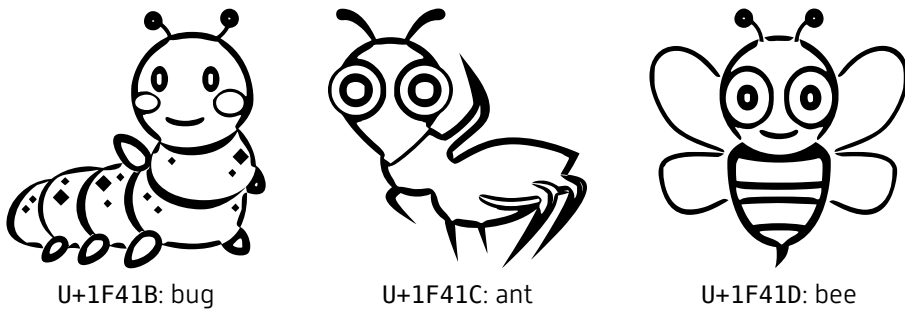
U+1F41B: bug   U+1F41C: ant   U+1F41D: bee

Figure 2: A few emojis from `emojionecolor-svginot.ttf`

boy gives family: 😃 + zwj 👩 + zwj 😃 + zwj 😃 = 👨‍👩‍👧‍👦, but two girls also work: 😃 + zwj 👩 + zwj 👧 + zwj 👧 = 👨‍👩‍👧‍👦, so does a mixture of kids: 😃 + zwj 👩 + zwj 👧 + zwj 😃 = 👨‍👩‍👧‍👦, although (at least currently): 😃 + zwj 👩 + zwj 😃 + zwj 👧 = 😃👩😃👧, gives twin boys. Of course the real family emoj is 👨‍👩‍👧‍👦.

In our times for sure many combinations are possible, so: 😃 + zwj 😃 + zwj 👩 + zwj 👩 = 👨‍👩‍👧‍👦, indeed gives a family, but I wonder at what point cultural bias will creep into font design. One can even wonder how clothing and haircut will demand frequent font updates: 👪, 👪, 👪.

In the math alphabets we have a couple of annoying holes because some characters were already present in UNICODE. The bad thing here is that we now always have to deal with these exceptions. But not so with emojis because here eventually all variants will show up. Where a character A in red or blue uses the same code point, a white telephone and black telephone have their own. And because obsolete scripts are already supported in UNICODE and more get added, we can expect old artifacts also showing up at some time. Soon the joystick 🕹 will be an unknown item to most of us, while the MICROSOFT hololens migth get its slot.

U+1F423: hatching chick   U+1F424: baby chick   U+1F425: front-facing baby chick
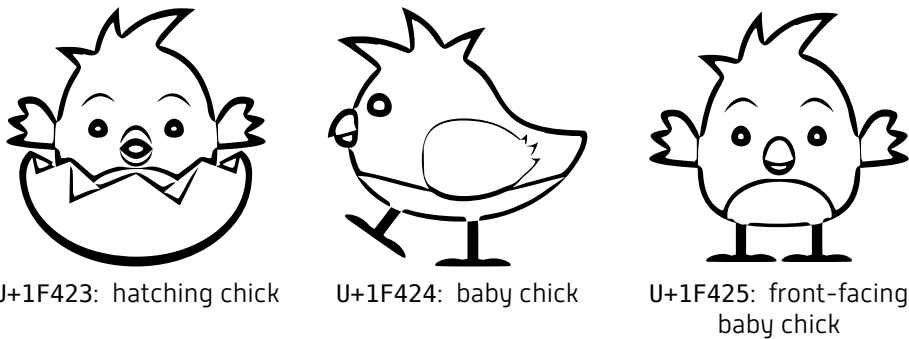
Figure 3: Will all animals come in stages of development?

For sure these mechanisms will evolve and to what extent we support them depends on what users want. At least we have the basics implemented.