1.2.2.1 Recording equipment

We recommend using machines which can record non-compressed digital audio in a non-proprietary format,[5] but we also refer to some other options. This standard essentially implies making high-resolution (16 bit/44 kHz or better) uncompressed PCM[6] recordings stored as wav files (Windows) or aiff files (Mac).[7] Countless alternatives exist, all of which have their strengths. Compressed but very high-quality (i.e. 'lossless compression') formats exist both in proprietary (e.g. Apple lossless) and open (e.g. FLAC) forms. Similarly, 'lossy' formats can be proprietary (e.g. the ubiquitous MP3) or open (e.g. AAC, intended as a
p. 20 successor to MP3). ↳ Arguments can be made for all these formats (not least on the grounds of file size, which translates to portability and availability over the internet). Sometimes the proprietary formats are the most efficient (quality vs. size) and/or the most common (at present). However, they can leave your data stranded if at some point the format is no longer supported. We have already discussed why any kind of audio file compression is generally not a good thing. So regardless of the temptations, non-compressed, non-proprietary PCM files remain the safe standard for primary recordings. It is always possible to make alternative versions of these using different codecs[8] for special purposes such as streaming over the web.

(i) Solid-state recorders

Solid-state recorders record directly to flash memory (internal, on removable media, or both) rather than to tape or disk. They comprise a huge range from humble and tiny MP3 devices (perhaps embedded in your phone) to studio quality, not particularly portable, mixing decks. The subset under discussion here are those that are compact enough for the field and also record in uncompressed PCM format. Early models tended to be bulky, heavy, expensive, and power-hungry. Today there are smaller, lighter, energy-efficient models, and a solid-state audio recorder makes a good primary recording device.

There is a plethora of ever-changing options regarding performance and features, but perhaps the most important distinction lies between those models that accept external professional quality microphones (usually via some combination of ¼ in. TRS or XLR jacks)[9] and those that do not. A further distinction can be made between those that support 'phantom powered' microphones and those that do not (see §1.2.2.2(ii) below). Since many good microphones require such power, this ability extends the range of equipment compatible with the machine. Even if microphones do not require phantom power, having suitable TRS and/or XLR jacks is desirable—our marvellously useful wireless microphones, for example, are self-powered but they use XLR connectors.

A machine that does not accept external microphones at all (or which does so poorly—it is worth searching online for user reviews on this topic) cannot be wholeheartedly recommended for linguistic fieldwork, since
p. 21 there are simply too ↳ many situations where the ability to use an external microphone is important, if for no other reason than to control the effect of background noise, as mentioned earlier. While this is less of a problem with solid-state audio recorders than with video cameras (because with audio-only it is generally easier to place the recording apparatus close to the speaker), it is still a major factor. We will discuss this further in §1.2.2.2(i).

Apart from the specifications regarding microphones, the differences between recorder models come down largely to rather subjective matters like ergonomics and perceived durability. A quantitative exception to this is the 'noise floor' characteristic, i.e. the background signal created by the device itself. It is very important to minimize this for quiet recording situations.[10] Handling the equipment during recording (e.g. to change settings) may also create noise which will be recorded (a solution might be a remote control).[11]

In an era of convergence (phones as computers, computers as phones and so forth), it is worth keeping an open mind on what functions a particular device can support. A particularly interesting new development in solid-state audio recorders is the incorporation of a basic video camera (so far only in the 'Zoom Q3'). This