# Video 2

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# Who are we?

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  - Research interests: socio-cultural linguistics, discourse analysis, phonetics, phonology, Bantu languages
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# MORE ABOUT YOUR CAMERA

# Revisiting your camera

- In Video 1, you learned:
  - Some of the basic features of your camera
  - Some basic techniques of recording video and audio
  - Some basic camera handling techniques
- Today, we will revisit some these in more detail.
- We will also cover some technical issues regarding video recording.

# Lines of video resolution

- The number of horizontal lines in an image.
  - Standard definition (SD) in the US: 480 lines
  - High definition (HD) in the US: 720 or 1080 lines
- However, other countries have other specifications. For example:
  - SD in the UK and Europe: 576 lines
  - HD in the UK and Europe: 720 or 1080 lines

# Lines of video resolution

# Frame (Refresh) rate

- Frame rate: is the rate at which a monitor/ television produces an image.
  - Film: 24 frames/second
  - NTSC television: 60 fields/second for video material; 30 frames/second for film material
  - PAL television: 50 fields/second for video material; 25 frames/second for film material

# Color systems

- Since your videos may be displayed on a television, there are some other additional complications to be aware of.
- Color system: how television encode/decode color signals.
  - US, Japan, western South America: NTSC (National Television System Committee)
  - Europe, Australia, south Asia, most of Africa: PAL (Phase Alternating Line)
  - France, west Africa, Russia: SECAM (Sequential Color with Memory)

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# Distributing your video

- You should carefully consider how you will distribute your videos with community members and colleagues.
- If you plan to make tapes, DVDs, Blu-Rays for people to play on stand-alone machines:
  - You will need to convert your video signal (painful)
- Alternative is to simply play your video on a computer or upload to a video site such as YouTube.

# Digital video

- Most HD digital video cameras will encode the video file using the AVCHD format (Advanced Video Coding High Definition).
- Usually your camera will come with software to help edit your files.
- More expensive editors, such as Adobe Premiere or Final Cut Pro, can also edit these files.

# SD Cards

- SD cards are rated according to how fast it can transfer data to/from the card.
- For video cameras, manufacturers recommended that you use Class 4 or higher.

# SD Cards

- Approximate recording times for an 8 GB card:
  - Highest quality (24 Mbps): 40 min.
  - Next best quality (17 Mbs): 60 min.
  - Average quality (12 Mbps): 85 min.
  - Below average quality (7 Mbps): 140 min.
  - Lowest quality (5 Mbps): 180 min.

# Digital vs optical zoom

- There are two types of zoom on a video camera: digital zoom and optical zoom.
  - A camera can have either or both types.
- Digital zoom:
  - works by magnifying a part of the captured image using digital manipulation
  - the image loses quality very quickly when zooming
- Optical zoom:
  - provided by the lens (i.e. the optics)
  - does not lose image quality

# Digital zoom

# Optical zoom

# Special recording modes

- Many cameras come with pre-programmed auto-exposure settings to help make quick adjustments to your camera.
  - They can also help you make the best images when you have very little time to calculate the film speed, shutter speed, aperture settings, and color modes.

# Special recording modes

- Sample settings:
  - Portait: large aperture leads to sharp foregrounds, and blurry backgrounds
  - Sports: foreground and background are reasonably sharp
  - Low Light/Night: large aperture, higher film speed for lower digital noise
  - Snow/Beach: compensates for reflected sunlight, prevents subjects from being underexposed

# Cinema Mode

- Video images look very different from cinema images.
  - Video images are ‘smoother’ looking because it has a higher temporal resolution (e.g. 60 images/second)
  - Film looks ‘jerky’ because it has lower temporal resolution (e.g. 24 frames/second)
- Some cameras will allow you to record at 24 frames per second.
  - Do you need to capture something that may occur faster than 42 msec? If so, do not use 24 frames/ second.

# Image stabilization

- Image stabilization reduces blur and shaky shots.
- Some recordings come with 2 settings:
  - High (dynamic): compensate for a higher degree of camera shake (e.g. Walking)
  - Low (standard): compensate for a lower degree of camera shake (e.g. Stationary)
- Warning: image stabilization should not be used when the camera is on a tripod. It leads to undesirable image pumping and poor focus.

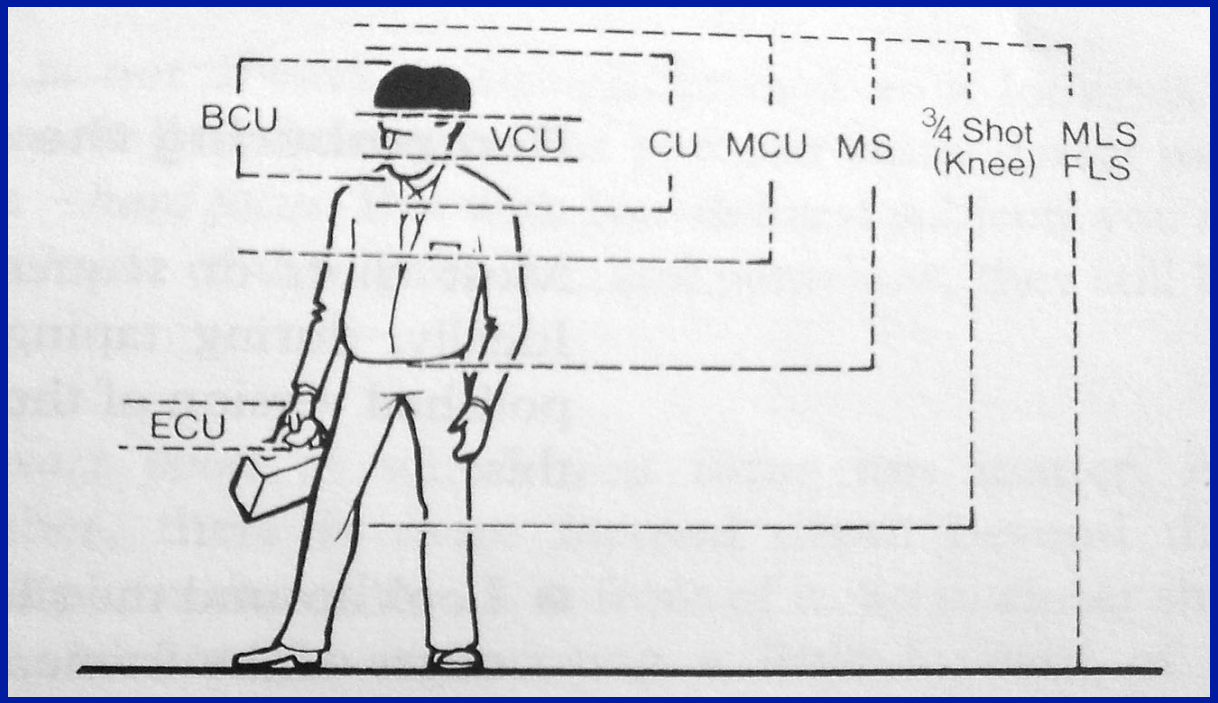
# Face detection and autofocus

- Some cameras have an algorithm to detect faces.
  - The camera uses this information to automatically select video settings.
  - Warning: face detection is easily fooled. It will mistakenly detect portraits and some animals.
- Autofocus
  - Sensor controls a motor to automatically focus on a selected point
  - May not work well in low light situations, or when the subject is highly reflective or fast-moving.
  - Warning: too many subjects can fool the autofocus system.

# OPERATIONAL TECHNIQUES

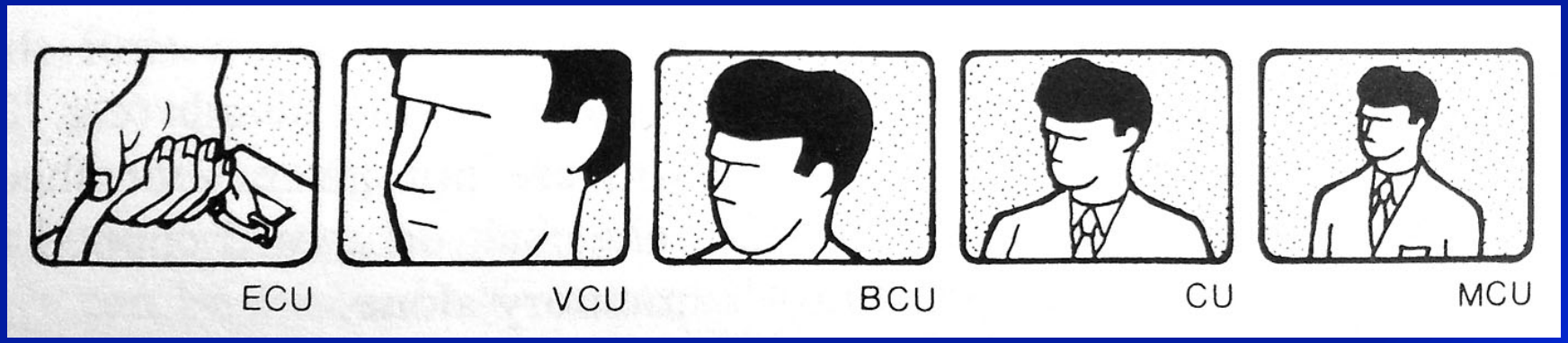
# Shot composition (lens coverage)

- A series of terms have evolved to describe how to effectively shoot people.
- Hint: None of the lines go through joints!



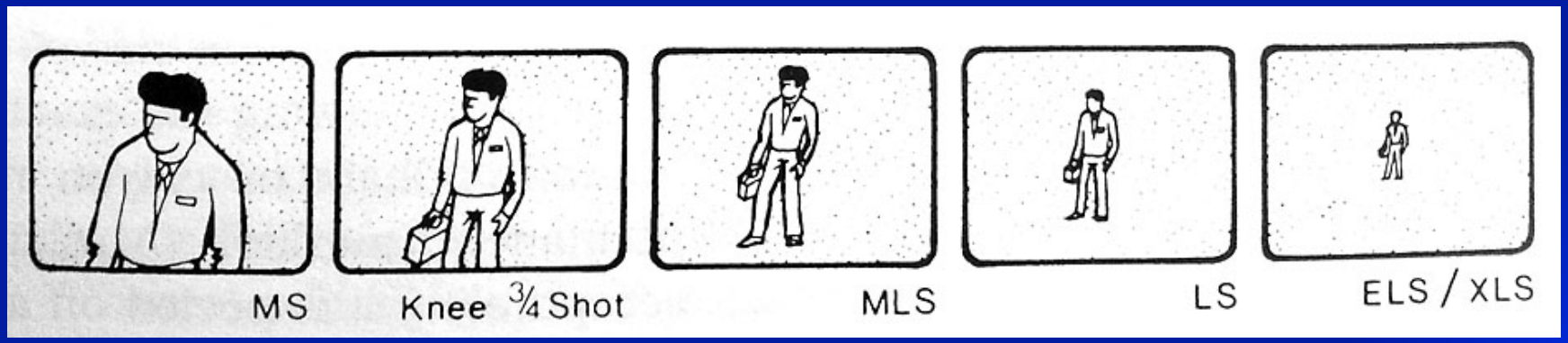
# Shot composition (lens coverage)

- Detail shot (extreme close-up): capture isolated detail
- Face shot (very close-up): mid-forehead to chin
- Big close-up: full head height
- Close-up: head and upper chest
- Medium close-up: head and lower chest



# Shot composition (lens coverage)

- Medium shot: cuts just below the waist
- Knee shot: cuts just below the knew
- Medium long: full body with head room
- Long shot: person occupies ½ - ¾  screen height
- Extreme long shot: person occupies less than ½ screen height



# Shot composition (camera viewpoint)

- You can orient your subject in a variety of ways:
  - Frontal shot
  - Profile or side shot
  - Three-quarters frontal
  - back or rear shot
- You can change the height of the camera
  - low shot
  - level shot
  - high shot
  - overhead shot