The best motion control rigs are "frame accurate." This means that on multiple passes, at any given film frame on a camera pass, the camera will be in an identical position to that of previous passes, regardless of the physical speed of movement of the camera. This means that matching up passes in the post-production phase to produce the composite image becomes very fast and painless, and consequently cheaper.

Aside from the obvious benefits of multiple camera passes, this also provides major advantages when combining live action with computer generated images (CGI) for the following reasons. In order to have digitally created images appear to interact photo-realistically with the real world, they have to meet three basic criteria. Firstly, the digital image has to be in perspective with the background. Secondly, the digital image has to have the same lighting and color balance as the background. Thirdly, the digital image has its own three-dimensional shape which always has to be oriented to the viewpoint provided by the film camera.

A motion control rig also has other major benefits when filming. For example, the director always knows exactly what the camera is going to do once the move has been set up, so he can devote all of his attention to the action and not the camera. It has also been remarked that because a camera move can be set up so simply and rapidly, it can even make single-pass live action shooting easier.

And with the latest pre-visualisation software, the director can even plan the camera move or moves beforehand, and know that the rig will be able to physically perform the move before he even gets into a studio. So, what then is motion control? It is an essential production tool in the toolbox of filming techniques, which allows that extra depth of realism in many special effects shots. (© Mark Roberts Motion Control Ltd.)

cinematic continuity
SHOOTING FOR EDITING

Framing is ultimately shooting for editorial. The primary purpose of the shoot is not to get some "great shots" in the end; it must serve the purpose of the film by giving the editor and the director what they need to actually piece together completed scenes and sequences which add up to a finished product that makes sense and accomplishes its purpose. There are four primary categories of continuity.

CONTINUITY OF CONTENT

Continuity of content applies to anything visible in the scene: wardrobe, hairstyle, props, the actors, cars in the background, the time set on the clock. As discussed in the chapter on Set Operations, it is the script supervisor in conjunction with the various department heads who must ensure that all of these items match from shot to shot.

These kinds of problems extend from the very obvious: she was wearing a red hat in the master, now it is a green hat in the close-up, to the subtle — he was smoking a cigar that was almost finished when he entered and now he has a cigar that is just started. While the script supervisor, on-set wardrobe and prop master are the first line of defense in these matters it is still up to the director and camera crew to be watchful for problems.

As with almost anything in film there is a certain amount of cheating that is possible; the audience can be very accepting of minor glitches. Absolutely perfect continuity is never possible and there is a large grey area. It is sometimes said that, with creative cheating, you can get away with anything but errors in wardrobe continuity.

CONTINUITY OF MOVEMENT

Anything that is moving in a shot must have a movement in the next shot which is a seamless continuation of what was begun. Whether it be opening a door, picking up a book or parking a car, the movement must have no "gaps" from one shot to the next. This is where it is so critical to be aware of how the shots might be cut together later.

To play it safe in shooting any type of movement and be sure that the editor is not constantly making choices, it is important to overlap all movement. Even if the script calls for the scene to cut away before she fully opens the door, for example, it is best to go ahead and let the camera roll for a few seconds until the action is complete. Never start a shot exactly at the beginning of a movement — back up a bit and roll into it, then let it run out at the end.

One prime example of this is the "rock-in." Say you shoot a master of a character walking up to the bank teller. He is there and already has his checkbook out and is talking to the teller in the master. You then set up for a close-up of the character over-the-shoulder of the bank teller. You may know for certain that the edit will pick up with the character already in place, but the safe way to do it is to have the character do the final step or two of walking up as shot in the close-up OTS position.

There are times, however, when focus or position is critical. It is difficult to guarantee that the actor will hit the mark with the precision necessary to get the shot in focus. In this case a "rock-in" is the way to go. The technique is simple: instead of starting a full step back, the actor keeps one foot firmly planted and steps back with the other, then when action is called he can hit his mark again with great precision. The most important aspect of continuity of movement is to screen direction, which is discussed in more detail later in this chapter.

CONTINUITY OF POSITION

Continuity of position is most often problematic with props. Props that are used in the scene are going to be moved in almost every take. Everyone must watch that they start and end in the same place, otherwise it will be an editor's nightmare. This is often the dividing line between a thoroughly professional performer and a beginner: it is up to the actor to use the props and place them exactly the same in every take. If for some reason, there is a mismatch in placement of a prop between the master and a element of coverage, it is up to the director to either reshoot one or the other or to do some sort of repair of coverage that will allow the editor to solve the problem.

This can be done in a variety of ways. One simple example: if the actor puts the glass down on the left side of the table in the master, but it is on the right side in the medium, one solution is to do a shot where the actor slides it across the table. This solves the problem, but there is one drawback: the editor has to use that shot. This may end up creating more problems than it solves.

CONTINUITY OF TIME

This does not refer to the problem of resetting the clock so that it always reads the same time (that is prop continuity and comes under control of design — see Figure 5.1, rather it has to do with the flow of time within the scene. For example, if Dave North is walking away from Sam South in the wide shot, then you cut to a close-up of Sam South, by the time you cut back to Dave North, his action must be logical: he walks five steps away. Clearly he can't have walked that far in three seconds and the effect will be jarring. This applies mostly within a scene which is being played out realistically. There are many exceptions, as discussed below in the section on manipulation of time.

Internally within the scene, certain conventions help maintain pacing and flow, particularly in cases where a character moves within a scene. The actor or background at the beginning of the move may be important as they may be important at the end of the scene (indeed, they must be, otherwise why are they being shot?). The middle part of the move, however, is often not important information. If the character has to cross a wide room or walk up a flight of stairs, it may be helpful to skip over some of that movement.

To just skip it would be, of course, a jump cut and a serious error in continuity but there are several work-arounds. The simplest is to let the character exit frame then enter frame in the next shot. This is a simple form of an elliptical cut (see below) and a good deal of movement time can be left out without disturbing smooth continuity. This is a culturally conditioned film convention that audiences worldwide have come to accept.

To preserve movement continuity and screen direction, if the actor exits the left side of frame she must enter the next shot on the right side.

In his book The Technique of Film and Video Editing, Ken Danycy points out another device used by Kurusawa in Seven Samurai and by Kubrick in Paths of Glory and, of course, in many other films: a tight close-up of the character that tracks or pans as the character moves. As long as the direction, action and speed match that of the wide shot, the movement of the character can either be longer or shorter than the real time move would take. If the character changes direction in the shot, then that change of direction must be preserved when cutting back to a wider shot.
5.3 (above) The movement of the car establishes the line. The woman at the top will see the car moving to her left (5.4, above right); the woman at the bottom will see the car moving to her right (5.5, right).

5.6 (below) If both of the women are viewing the car from the same side of the street, then they will both see it moving in the same direction, as in 5.7 (below right). This is the basic principle of "the line" and screen direction.

5.8 (above, far left) Two people relating to each other in some way create a "line" — indicated here by the dashed line. With the camera on one side of them (shown here at the bottoms of the picture), the woman will be on the left and the man will be on the right, as in 5.9 (above, middle).

5.10 If the camera is shifted to the other side of the line (lower far left) their positions are reversed: the man is now on the left and the woman is on the right, as shown in 5.11 (lower left). These two shots could not be cut together without creating a jarring effect.

5.12 (above, right) Where the camera can go without creating a jump in directional relation is defined by a 180° semi-circle on one or the other side of the line. The camera can go anywhere in that 180° arc and directional continuity is maintained. This semi-circle sweep will be used throughout this chapter as a symbol for camera positions that maintain continuity. It is a symbol only — the camera can go closer or farther away, higher or lower as long as it stays on the same side of the line.

**THE PRIME DIRECTIVE**

Most of these techniques and rules are based on one principle — to not create confusion in the mind of the audience and thus distract them from the story or amuse and frustrate them. Let's take a fundamental example (Figures 5.3 through 5.7). Two women are standing on opposite sides of the street. Woman "A" sees the car going right. Woman "B" sees the car going left. If we move them to the same side of the street, they will both see the car going in the same direction in relation to their own sense of orientation (left/right).

Thus their perception of the car will be the same. The movement of the car establishes direction, but there is another aspect: where the women are viewing the movement from is also important. In combination, these two establish the spatial orientation of the scene.

**THE LINE**

Anybody standing on the same side of that line will see things from the same orientation. "A" will always be on the left and "B" will always be on the right. Anybody standing on the other side of the line will see the opposite: "B" on the left and "A" on the right. It doesn't matter where on the other side, the result is the same.

This is what we call screen direction. Let's take this simple two shot (Figures 5.8 through 5.11). From our first camera position (Figure 5.9), the woman Lacey is on the left and the man Ralph is on the right. Then, in Figure 5.10, the camera position is shifted to the other side of the line. In Figure 5.11, the audience will see, for no reason they can understand, Ralph is on the left side facing right and Lacey is on the right side facing left. It will confuse the audience, they won't be able to readily understand and assimilate the information. While their brains try to sort it out, their attention will be drawn away from the story. Not only will they be distracted from what the characters are saying and doing, if it happens often enough, it will annoy and frustrate them. What is it that delineates where we can put the camera to maintain continuity and where we can't?
THE ACTION LINE

There is an imaginary axis between these two characters. In our first example of the car, the movement direction of the car establishes what we call the line. In all of these diagrams, it is represented by the large dashed line. The line is referred to by several terms; some people call it the action axis or the action line. If we stay on one side of it for all our shots — everything cuts together perfectly as in Figures 5.8 through 5.10. If we cross over to the other side — the characters will jump to opposite sides of the screen. Safe locations for the camera are symbolized by the 180° half circle — Figure 5.12. This semi-circle sweep will be used throughout this chapter to represent the camera locations which will result in consistent directional continuity. It is a symbol only; in practice the camera can go nearer or farther, higher and lower in relation to the subjects.

THESE ARE THE RULES — BUT WHY?

The basic rules of "not crossing the line" are known to all working filmmakers, but many do not stop to consider the fundamental theory and perceptual issues that underlie this principle. It is important to understand it at a deeper level if you are to be able to solve the stickier issues that do not conveniently fall into one of the basic categories of this system. More importantly, it is only when you understand the whole theoretical system that we can truly understand when it is permissible to break the rules.

First, we have to consider directionality. What do we mean by that? What is something that's not directional? Not much really. A featureless cylinder or a globe painted all the same color are non-directional, but just about everything else is. A sofa is directional; so is a car. A woman looking at a building is directional. More importantly, her body is directional.

Movement is also directional. Say we took that featureless globe and rolled down the sidewalk. Its line of movement is the line. If we see it from one side of the line, it's going to our left and if we see it from the other side of the line it is going right. A map picking up a book is directional. The imaginary line exists between any two objects that have some sort of relationship. Even between a book and a telephone sitting on a table.

WHAT ESTABLISHES THE LINE?

Is the line always there? No, the line only exists once it has been created by something in the scene in conjunction with the position of the camera. As we saw in the example of the two women and the car, your first camera setup-up in the series of shots establishes the line but it works in conjunction with elements of the scene itself.

Several things can establish the line for a particular scene. They are:

- A look
- Movement
- A specific action
- Exiting frame
- Physical geography (e.g., a doorway)

Examples: Compare shots at left in Figures 5.13 through 5.16. Another way of thinking of it is called the 180° rule. Once the camera is placed on one side of the line, you can move anywhere in that 180° space and the shots will cut together (Figure 5.12).

SCREEN DIRECTION

Screen direction serves two important purposes: it gives the audience clues about the story and it helps keep the audience from getting confused about where someone is or what they are doing.

5.17. (left) The line established by these and easily understood geography. The action line is particularly visible in this shot from Night Noon. Interestingly, the filmmakers actually purposely violate the line a few times in this scene, but since the geography is so strong these violations do not create a continuity problem.

DIRECTIONAL CONVENTIONS

The classic example of this is in low budget cowboy movies of the fifties. In these films it was always well established that one direction on screen was "towards town" and the opposite direction was "away from town" (Figures 5.18 and 5.19). Once we know that we could tell if the good guys (white hats) or the bad guys (black hats) were heading toward town or away. Any deviation from this would have been very confusing. This type of editing was employed by D.W. Griffith, most notably in his epic Birth of a Nation (1915) where he used cross-cutting (cutting from one advancing army going one way to the other advancing army going the other way) to establish tension and drama. Typically as they get closer and the moment of confrontation nears, the cuts become quicker.

Another convention applies to trains, planes and automobiles. If someone is leaving the east and going to the west the plane or vehicle should be traveling left in the frame and vice versa. This is derived from the fact that nearly all maps have north at the top, thus west is left and east is right.

DELIBERATELY BREAKING THE RULES

One of the aims of editing is to not confuse the audience. If a character is walking towards the left of the screen in one shot and without explanation in the next shot he is walking toward the right, the audience will (even if only subconsciously) wonder why he changed. Their attention will be momentarily drawn away from the story as they try to sort it out.

This is the basic principle of all continuity in film shooting and editing. For example, she was just wearing a red dress outside the restaurant but once she stepped through the door she is wearing a blue dress. Is this a different day? A dream sequence? What happens?
 trusted by the audience. The camera rarely moves; it never changes the directional relationships of the actors or the set.

5.21 (below) An example of a true reverse from Seven Samurai. The camera jumps clearly and completely to the other side of the line.

5.22 (bottom) A very high shot, such as this one from The Lady from Shanghai, is another example of a neutral shot. From this frame you can cut to any angle and any camera position in the scene without creating a continuity clash.

5.23 (top left) In this scene of a couple sitting on a couch, the action line is clearly established. We can do any shots we want as long as we stay on the correct side of the line.

5.24 (top right) A new line enters and we would like to include him in a shot which shows all three. Cutting so that the camera passes diagonally over the existing line of the shot is illegal.

5.25 (lower left) Even though it is technically an enter, the shot works fine because it is done boldly and the sofa helps the viewers orient themselves.

5.26 (lower right) Cutting to a neutral shot such as this one coming directly toward you can help transition from one side of the line to the other.

5.28 (below) A neutral shot is one where the movement is either directly towards or away from the camera (Figures 5.28 and 5.29). In essence, the line itself has moved. Some people tend to think of the line as very rigid and static, that once the line is established it can never move the whole rest of the time you are shooting the scene, but actually it is fluid and can change throughout the scene, as we will see later.

There are several important exceptions to the rule of the line.

- If we see things change position in the shot, then we understand that things have changed position. If the car is moving right in the shot, and then we see it turn around so that it’s going left, then there’s no problem (Figures 5.16 and 5.19).
- When the camera position moves during the shot.
- If you cut away to something completely different, when you cut back, you can change the line.
- In the case of something that is moving, you can cut to a neutral in a shot, then go back to either side of the line.

REVERSE

Another case of crossing the line is when you deliberately go to the other side for a reason. Say two people are seated on a sofa and we do extensive coverage of them from in front of the sofa, the most logical place to shoot from (Figures 5.21 and 5.22); also 5.24 through 5.27. Clearly the line has been well established. But now there is another important action. A new character has to enter through the door and there is a conversation with the two people on the sofa.

It always helps to show a character entering the room rather than just having them enter frame when we don’t know where they came from.
from. The simple solution would be to just turn the camera around and see him enter the door. There are a few problems with this. First of all, it doesn't connect the new character to our two people.

Second, we wouldn't really know where the door is and that he is entering the same room. Since they have not been seen the door before, for all the audience knows, we have gone to a completely new scene and this man is entering another room somewhere. Finally, we don't have a chance to see their reaction to him coming in. For example, do they stand up quickly when he enters in, as if they are frightened by him? What would really like to do is put the camera in the back of the room behind the sofa, so we see them in the foreground and see him entering. This establishes everything: it's the same room, the door was behind all the time, we see their reactions, and so on. But that would be crossing the line so we can't do it, right?

Yes it is crossing the line, but yes, you can do it. It's called a reverse or a reverse angle. But you can't just do it willy-nilly. You can't do it on a close-up; that would be just crossing the line. The important thing is that we still see the two people in the foreground, but we see the new character and the door in the background. There is motivation for being on the other side; there is an understandable reason. We may be in a new orientation, but it is comprehensible.

Another factor in a successful reverse is the boldness of it. Just crossing the line slightly would probably not work. It is when you definitively and unquestionably are on the other side of the line that a reverse is understandable. The audience does have to do some mental reorientation, but given the proper clues they can do it without disruption.

TURNAROUND

Obviously you would never do the over-the-shoulder on one actor, then move the camera to do the OTS on the other actor, then go back to the first for the close-up and so on. This would be very inefficient and time consuming. So naturally you do all the coverage on one side then move the camera and reset the lighting. This is called the turnaround. The group of OTSs and close-ups which match the ones done on the first actor are called the answering shots. Every shot you do in the first set-up should have an answering shot. After

5.30 Cheating a turnaround requires careful thought — it is not a matter of simply switching the actors. To make it work you have to move the camera over so that it ends up shooting over the correct shoulder of the new subject.

5.31 Cheating the turnaround sometimes includes cheating the background or set dressing. Preplanning all the coverage for a scene can often help avoid this.

5.32 (above, far left) A walk-and-talk is not as simple as it seems. There are actually two action lines here.

5.33 (above, middle) Their direction of walking is one, but the look between the two of them is the stronger action line. It is easier to cross the line of their direction of travel without disturbing the continuity (5.34, above right).

CHEATING THE TURNAROUND

In any of these cases, it is possible to leave the camera and lights where they are and just move the actors. This is a last ditch measure and is only used in cases where the background for one part of the coverage is not usable or there is an emergency in terms of the schedule, if for example, the sun is going down. The theory is that once we are in tight shots on the coverage, we really don’t see much of the background.

It is not correct, however, to just have them switch places. In our sample scene, we are over the shoulder of Jennifer, looking at Dave. In the OTS of Dave, we are seeing over Jennifer's right shoulder. If we did a real turnaround, we would be over Dave’s left shoulder. (Figure 5.30.) In this illustration we see two cases: in #1 we rotate the camera 180°. This is a real turnaround. In case #2 we just spin the actors and leave the camera where it is. You can see the problem: the camera is over the wrong shoulder.

In cheating a turnaround, you have to either move the camera a couple of feet or better, just slide the foreground actor over so you are over the correct shoulder. (Fortunately, moving the foreground actor seldom involves any substantial relighting.) The key to a successful cheat is that the background either be neutral or similar for both actors as established in any previous wide shots. If there are recognizable objects in the background, it may be helpful to shift a bit.

PREPLANNING COVERAGE

Which brings us to another key point which is easily overlooked, whenever you are setting up a master, take a moment to think about the coverage. Make sure that there is some way to position the camera for proper answering shots. Particularly if one character’s coverage is more dramatic or more crucial to the story than the other, it is very easy to get yourself boxed into a corner or up against an obstruction that makes it difficult or impossible to position the camera for a proper answering shot (5.31).

Remember that ideally, an answering shot should be the same focal length, focus distance and angle as the shot it is paired with. In a pinch, if you can’t quite get far back enough (or close enough) you can cheat a bit with a different focal length to end up with the same window and door matching, the turnaround is the other major area where cheating is employed. In cases where some physical obstacle precludes a good camera position for the turnaround, or perhaps the sun is at a bad angle or maybe it’s a complex lighting setup and there simply isn’t time to break it down and re-light for the answering shot.

cinematography
5.38 and 5.39 (above) In this door shot from Touch of Evil, the character switches direction.

5.38 and 5.39 (above right and far right) Maintaining the same direction while going through a door is often desirable, but by no means required.

5.40 (below) Covering curved walls.

5.41 (bottom) Some positions which seem to be on the wrong side of the line (A-1 and E) are OK because they are actually neutral angles which can pan into either screen direction.

5.42. Before you shoot a character turning a corner, you have to think aloud where the line will be. The positions indicated by the X here would inevitably have the character moving toward the right instead of to the left. In cases of this general type, if you shoot a neutral angle you can technically go to another screen direction, but it still may not be a good idea. As with all issues of continuity and matching of action and experience are preferable to blindly adhering to cut and dried rules.

Since our attention is on the principles in the foreground, the movement of the background becomes a minor issue as we don't notice that the direction flips back and forth (Figures 5.43 and 5.44). When we are outside and the car itself is the principle object, this is no longer true, then screen direction of the car matters.

GOING THROUGH A DOOR

There are two schools of thought on door entrances and exits. Some will say that if a character goes through a door going to the right (in an exterior shot), they have to emerge on the other side also going right (in the interior shot). Others maintain that once someone goes through a door it is a "new deal" and anything goes. Again it is a subjective call. If there is a very clear connection between the two, and the directionality is very strong, then it is a good idea to maintain directional continuity between the two. If there is a great deal of difference between the interior and exterior and there is a greater change in angle, camera position, or lens size between the two, it is possible to go to the other side when the character emerges on the other side of the door, as in this example from Touch of Evil (Figures 5.36 and 5.37).

5.43 and 5.44 (top) Car shots are an example of camera positions which seem to violate continuity but are perfectly acceptable. The screen direction of the actors changes completely but since the car is clearly established where they are, there is no problem.

5.45 (below right) Standard camera positions for car mounts.

5.46 (below left) A neutral angle tail-away shot from Touch of Evil.

OTHER ISSUES IN CONTINUITY

MOVING SHOTS

Two types of shots predominate in moving shots: the driving shot and walk-and-talk. The same rules apply to both. At first glance we would think that the direction of the car or the walk is the major axis, but in fact it is only a secondary axis. The major axis for screen direction is between the two people as in Figures 5.32 through 5.34.
COVERING A CURVING WALK
A shot where a character or group walks in curves can be tricky, but as long as you remember the fundamentals, it can be easy to figure out as in Figures 5.40 and 5.41.

TURNING A CORNER
Turning a corner is subject to the same rules as covering a curved walk. If the camera cuts when the character disappears around the corner of a building, when we pick him up on the other side, the screen direction should be maintained (Figure 5.42).

ENTERING AND EXITING FRAME
As we noted before, exiting frame establishes screen direction. Once a character exits either frame left or right, they should enter the next from the opposite side (Figure 5.47). You can think of it as an imaginary pan. As the character exits frame, you mentally pan with them. This positions you correctly for the next shot of entering frame. As with all continuity sequences if something else comes in between the exit and the entrance, anything goes.

NEUTRAL AXIS TO EXIT FRAME
If the moving vehicle or character exits on a completely neutral axis, that you are forced to go anywhere you want on the next exit. For something to exit on a truly neutral axis, however, it has to exit either above or below the frame (Figure 5.48 and 5.49).

THREE SHOTS
Screen direction is basically the same in three shots, but one thing to watch out for is overlapping the person in the frame. If you break it up as a pair of shots, the person in the center will appear in both shots and there will be unavoidable continuity problems. The center character will "pop" as you cut from shot to shot (Figures 5.53 through 5.55).

KEEP THE NOSE OUT
For the same reason it is important to avoid getting a part of the foreground person in the shot when doing a clean setup over the shoulder of the second character. When two characters are fairly close to each other in the frame, it is often difficult to completely frame the second person out, especially if they move around a lot. Often their nose, or a hand or some small piece of them will creep into the shot.

This is not only compositionally annoying but will cause continuity problems. It will often be necessary to shift the off-screen character back a bit so they don't creep in. You don't want to do it so much that you "miss" his presence in the coverage. If there is a large shift, be sure to set up a new eyeline for the on-screen character so that their head doesn't shift too much from the master. It may be necessary for the actor to look at a mark rather than at the other actor, which is something to avoid as it makes it difficult for the performer.

PROP CONTINUITY IN COVERAGE
The principle of overlapping applies to foreground props as well as three shots. In this example (Figures 5.50 through 5.52), there is a candlestick on the table between them. If it is left in its position from the master, it will seem to jump back and forth as you cut from medium shot on one actor to medium on the other. Your choices are to cheat it out of the medium altogether (the safest) or creating it back and forth for each medium — riskier, but it may make the medium a better match to the master.

THREE SHOTS WITH DOMINANT CHARACTER
Three shots where one character is separate or dominates in some way call for a slightly different treatment (Figures 5.56 and 5.57). If we open with 5.56 as the master, coverage is then dictated by what we can think of as two screen direction lines — a major and a minor. The major axis (between the bartender and the man) applies to the whole scene, as in Figure 5.57. The minor axis applies to over-the-shoulders between the bartender and the woman.

5.53 (above left) A three shot with a dominant character in the middle.
5.54 and 5.55 (above middle and right) If coverage is not clean singles, then you need to be sure that hard and fast continuity matches for the character that appears on both sides of the coverage. In this example we see that he is gesturing with different hands. This will drive your editor crazy.
EYE SWEEPS

When an off-screen character walks behind the camera, the on-screen character may follow with her eyes. Many inexperienced directors are reluctant to do this as they think it won’t work. It’s perfectly OK as long as the eye sweep is slightly above or below the lens. As always, it is important that the actor not look directly into the lens, even for just a moment. The most important thing about eye sweeps is that they match the direction and speed of the crossing character. This means that the on-screen actor will move their head in the opposite direction of the movement of the crossing character, since we are essentially crossing the line in a reverse. If you are shooting the eye sweep first, it may be desirable to shoot a few different speeds as when the crossing is shot later, the speed may not match.

GROUP SHOTS

Scenes with more than three characters generally require a good deal of coverage. If there is a dominant character to the arrangement of the group, that will most likely dictate a screen direction line based on where you shoot the master from. In practice it may be possible to shoot from anywhere as long as you get the proper answering shots and coverage, however, it may be better to pick an arbitrary line and stick to it — this will reduce confusion in the audience’s perceptions. If there is a dominant character standing apart from the group, this will often establish the line. These frames from a group scene in Route 66 illustrate some of these principles. (Figures 5.63 through 5.67) Notice in particular the slight difference between 5.63 and 5.67. Both are shots down the middle of the axis; 5.63, however, is over-the-shoulder past the man in the suit while 5.69 does not include him. It is more of his POV. In this case we are said to be inside the character, that is, we are near him and his POV but not part of him is included in the shot.

CHASE SCENES

Chase scenes can be problematic for screen direction. As a general rule of thumb you want to maintain an overall direction within the scene but there is considerable room for variation. When the chase itself changes direction, your screen direction may change as well. For cutaways especially, some directors prefer to mix it up more with opposite shots of the same car from different directions and angles cut together dramatically to slightly disorient the audience and emphasize the kinetic nature of the chase. This is in keeping with Eisenstein’s theory of the “collision” of shots.

CONVERGING ACTION

Converging action or parallel cutting was first made famous by D.W. Griffith in Birth of a Nation (although he had used it before in smaller films). The idea is that as two opposing forces are moving toward each other, the visual tension and pacing should intensify. Naturally, they must be moving in opposite directions.

CUTAWAY EYE LINE CONTINUITY

Since cutaways are not part of the main scene but are physically related to it, directional continuity must be maintained between the location of the scene and the cutaway element. This is especially important for cutaways that involve a look from the additional character, which they often do (Figures 5.64 and 5.65). Since you’re moving away from the main scene and it is usually for a quick pick-up shot, often you will be up against limitations of the set, your lighting or other problems which will make it necessary for you to cheat the additional character a bit. In this case, it is important to be careful about the eye lines. Since often it is the look that is important, eye line direction is critical.

LOOK ESTABLISHES NEW LINE

In a related issue, let’s focus on the couple at the table. In our scene of a couple in a restaurant, the conversation between the couple has its own line. When she turns to look at the waiter, that establishes a new line which must be respected in all shots which involve the couple at the table and the waiter (Figures 5.67 through 5.69). It does not replace the line established by the couple’s conversation, which must still be used for any coverage at their table.

EYELINES OVER-THE-SHOULDER COVERAGE

When shooting over-the-shoulder coverage, the camera height will generally be at eye level for the characters. If the two performers are of unequal height, some modification is usually necessary. In this case, the camera height will approximate match of that of the character whose shoulder you are shooting.
EYELINES FOR A SEATED CHARACTER

The same principle applies when one or more of the characters is seated or on the floor, but with an important exception. Since shooting over the shoulder of the standing character might be an extreme angle, it also works to keep the camera at the eye-level of the seated performer which makes it sort of a "pivot shot." In situations like this, for the clean singles, when there is a difference in height or level of the characters in coverage, the eyelines may also need some adjustment. This does not apply to over-the-shoulders, as we can see the off-screen performer's head and thus we know the actual eye-level. In this case the eyeline of the seated characters should be slightly above the lens and the eyeline of the standing character should be slightly below the lens (Figure 5.66). Be careful not to overdo this. As with all eyelines and cuts, the final judgment should be made while looking through the lens. How it looks and how it will work in editing always trumps a rule.

OTS AND INSERTS

Inserts generally are not critical in terms of screen direction except in a general way. In the instance where the insert is a type of insert is quite common as the master scene or even an over the shoulder is usually not tight enough to allow the audience to actually read what the character is looking at. This is a case it is important to conform to the eyeline and screen direction of the character reading the material, even if they are not holding it in their hand.

MOVING ACTION

Once you thoroughly understand the underlying principles and the cognitive reasons for the rules, it is easier to see when there are exceptions and flexibility. It is important to remember that "the line is not some physical thing that has an independent existence on the set. The line is only in relation to where you have first established the scene by the camera placement of the first shot that appears on screen (Figures 5.70). Also, the line moves, as we saw in the example of the couple and the gangster in the restaurant. Most importantly, in a scene with moving action, such as a tight shot, the line will be shifting constantly.

In highly frenetic fight scenes photographed with lots of angles and cuts to be edited in a rapid fire sequence, the director and editor position often based on a painting of the set. The slow zoom out works on many levels, both visually and storyline.

THE PLACE

We need to sit the audience know where they are. Establishing shots and transitions are discussed in the chapter on Filmmaking. There is an important exception to this called slow disclosure. In this technique, instead of opening with a wide shot, the scene begins with a tight shot of a character or another scene element. Only as the scene progresses does the camera pull back to reveal where we are and what is going on. This is a variation of the basic reveal where the camera starts on something that either moves or the camera moves past it to show some other scene element.

Not only a master shot but also a great visualist, Stanley Kubrick uses slow disclosure masterfully in Barry Lyndon (Figures 5.71 and 5.72). Throughout the film, one of the key formal devices is the very long, very slow zoom back. He starts with a telling detail of the scene and then very deliberately pulls back to reveal more and more. As with so many other aspects of the film (its perfectly composed fixed frames based on dramatics of the period, the emphasis on formal geometry and the slow pacing of action and editing), this slow pull back underlines the rigid formalism of society and culture of that time as well as the fatalistic inevitability of Lyndon's decline.

THE TIME

Beyond where we are, the viewer must know when we are. Internally, within the scene, this is either a function of a transition shot or other types of temporal clues. In these two frames from Raton (Figures 5.73 and 5.74) the director decided to find a way to establish that fifteen or twenty minutes had passed. This can be much more difficult that conveying that days have past or that it was summer and now it's winter - which can be accomplished by a simple exterior shot of the green leaves which dissolves to a shot of the same tree barren of leaves and a layer of snow on the ground. Here he has done something very valuable. In the first shot we see the ballboy starting to put decorations on a tree in the hotel lobby. In the second shot, as the camera pans to follow the character's exit, we see that the decorations have been completed. For the vast majority of the audience, this is no double completely subconscious, but it does help to convey the passage of time.

THE GEOGRAPHY

This was discussed previously, but it deserves mention here as there are several aspects to establishing the geography which relate to actual shooting on the set. Establishing the place usually just serves the purpose of showing where the scene takes place. This is called the establishing shot. Establishing the geography is a bit different than just letting the viewer know where the action takes place. Where an establishing shot is generally an exterior view of the building, establishing the geography relates to the scene itself, particularly, but not exclusively, the interiors. It is not enough that the audience knows the general location of the scene, it is also important that they have a general comprehension of the layout of the place - the overall geography. This prevents confusion as actors move around or as the camera cuts to other viewpoints or other action within the scene.

THE MAIN CHARACTERS

Introducing the characters is of course mostly a function of the script and the actors but a general principle is to introduce key characters in such a way that visually underlines some aspect of their importance, their nature and their story function. Also, making this
5.75. A dramatic and suspenseful introduction of the main antagonist in High Noon. The director delays showing his face until the most dramatic story moment.

introduction visually interesting helps the audience remember the character: a form of visual punctuation.

For the entire first half of High Noon, we have been waiting for the arrival of the bad guy on the noon train. He has been discussed, feared, even run away from. Finally we meet him (Figure 5.75). Zimmermann handles his introduction cleverly. As he first gets off the train, we do not see his face. Then for an entire sequence of shots, we see him being greeted, strapping on his gun — still we do not see his face. Finally, his former lover is getting onto the train; she is leaving town only because he has come back. She turns to look at him and it is only then that we first see his face as his eyes lock with hers. It is a dramatic and distinctive way to introduce him.

OTHER EDITORIAL ISSUES IN SHOOTING

EDITORIAL FOODING

In the course of shooting the scene, it is important to not be so focused on the essential action and storytelling that there is no thought of the small shots that will help the editor put the scene together in a way that is seamless, logical and also suits the tone, pacing and mood of the sequence. These include cutaways, insertts, and little character type shots that may not be directly related to the scene but contribute to the overall ambiance. Some directors keep a running list of "things to get," but the safer strategy is to let the script supervisor keep this list.

JUMP CUTS

Disruptions of continuity can result in a jump cut. Although clearly an error in methodology, jump cuts can be used as editorial techniques. Touchstones and other of the novalists in France in the early sixties were among the first to employ jump cuts effectively. According to Ken Dancyger, in his discussion of The 400 Blows: "How did the stylistic equivalent of the personal story translate into editing choices?" The moving camera was used to avoid editing. In addition, the jump cut was used to challenge continuity editing and that is implied. If the jump cut itself is nothing more than the joining of two noncontinuous shots. Whether the two shots recognized a change in direction, focus on an unexpected action, or simply don't show the action in one shot that prepares the viewer for the content of the next shot, the result of the jump cut is to focus on discontinuity. Not only does the jump cut remind viewers that they are watching a film, it is also jarring. This result can be used to suggest instability or lack of importance... The jump cut asks viewers to tolerate the admission that we are watching a film or to temporarily suspend belief in the film.” (Ken Dancyger, The Technique of Film and Video Editing).

THE SIX TYPES OF CUTS

Some aspects of editing are beyond the scope of what we deal with in day-to-day production on the set, but directors, cinematographers and videographers must know most of the major concepts of editorial cutting in order to avoid mistakes and to provide the editor with the material she needs to not only cut the film together seamlessly, but also to control pacing and flow, delineate overall structure and give the scenes and the whole piece unity and cohesion. There are six basic types of cuts, some of which have been touched on above.

They are:

- The action cut
- The action cut
- The action cut
- The action cut
- The action cut
- The action cut
- The action cut
- The action cut

THE CONTENT CUT

The content cut applies to whenever we cut to a new shot within a scene only to add some information or carry the story forward. In its simplest form, content cutting is used in the coverage of a conversation. We cut from the master, to the over-the-shoulder, to the close-up. Nothing changes in these shots except the content. We were seeing both of them, now we see one of them, etc. The content cut is just a part of the overall forward progression of the narrative. As with all cuts, it must obey the basic rules of the line and the 20% rule in order to be cuttable.

THE ACTION CUT

The action cut, sometimes called a continuity cut or a movement cut, is employed whenever action is started in one shot and finished in the next. For example: in the first shot we see him opening the door, in the next shot we see him emerging from the other side of the door. Or she reaches across the table, then cut to her hand picking up the cap of coffee. Shooting for the action cut must be done properly if it is to work in editing. First of all, you should always overlap the action. In this example, it would be a mistake to have her reach for the cap of coffee then call “cut” as soon as her arm extends, then proceed to a close-up of her arm coming in to pick up the shot. There is a grave danger that there will be a piece of coffee which will result in a jump cut. In this case, if her arm extends only to the edge of the table in the first shot but when we see it in the next shot it is all the way to the middle of the table that missing part will be very noticeable.

Shooting the overlap also gives the editor the choice of exactly when to time the cut. This is important not only for pacing but for continuity as well. Often when there is an absolute exact match between her arm movement in the wide shot and in the close shot, if the editor has some freedom to time the cut, small problems in movement can be smoothed over. In this small example, the overlapping action is fairly small. In the case of entering and exiting doors, getting in and out of vehicles, etc., fairly substantial overlaps should be shot. This is especially true if there is important action or...
dialog going on during the move. In that case, the editor needs to have the ability to adjust for performance and narrative flow as well as simple continuity.

In shooting close shots which continue the action in a larger shot, it is also important to match the speed of the action. In the case of picking up coffee, the actor may be in the middle of a big speech as she reached for the coffee and thus did it slowly and deliberately. If a good deal of time has passed between shooting the wide shot and picking up an insect of the hand picking up the coffee, it is possible that she will not be doing the dialogue and all she is doing is picking her hand in the frame to grab the cup. In this case, it is very easy for her to forget the pacing of the original shot and think of this as something independent. The urge is to just stick your hand in and grab it.

Cutting On Action

While shooting for an action cut it is important to always be aware of the possibilities of the cut point. It is always best to cut "on the action." If someone is seated at a desk and rises to go to the door, you want to shoot while he is rising from the chair. If the phone rings, you want to cut to the next shot while he is reaching for the phone, and so on. Cutting on action makes for a smoother cut and a more invisible one. The audience is a bit distracted by the action and less likely to notice the cut. It also makes continuity and flow much easier. Take the example of answering the phone. Let's assume that in the medium shot, the phone rings, he picks it up and starts talking. Then we cut to a close-up of him talking. In this case, it is critical that his head be in exactly the same position, that he is holding the phone in exactly the same way and his facial expression be exactly the same. If any of these fails, it will be bad continuity and will be distracting. Cutting on his reaching for the phone avoids these problems.

THE POV CUT

The POV cut is sometimes called "the look." It is one of the most fundamental building blocks of continuity and is especially valuable in establishing shots and establishing physical relationships. A POV cut occurs anytime a look off screen in the first shot motivates a view of something in the next shot (Figures 5.76 and 5.77). The simplest case:

Shot #1: A character looks off screen and up.

Shot #2: A view of a clock tower.

There will be no question in the mind of the viewer that we are seeing the tower as he would see it; that is from his point-of-view.

In order to do this, the POV shot must satisfy certain conditions.

- Direction of look. If it is to a shot of the clock tower, clearly, he has to look up. Further, he must look up at approximately the right angle. If his gaze only rises about 10°, for example, and the clock tower is ten stories high, it would look odd. Similarly, if we have seen a wide shot that the clock tower is on his right side, then his look must go to the right as well.

- Angle of the POV. The shot of the clock tower must bear some logical relationship to where the viewer is. If we have seen that he is standing on the plaza right under the tower, then we cannot cut in a shot of it as seen from a hundred yards away as seen over the trees.

The POV cut is a classic means of cheating locations. For example, our story is based on him seeing a murder in the building opposite him but unfortunately, the building opposite our location is unavailable for use. In this case, the POV cut from him looking out the window to a POV of his view through the window of the building across the street will sell the concept that he can see the murder.

As discussed in the chapter on Filmspace, it is easy to over rely on the POV cut to the extent that it makes the scenes artificial and empy. It is always best to get a connecting shot that ties it all together if at all possible (Figure 1.30).

THE MATCH CUT

The match cut is most often used as a transitional device between scenes. An example from a western: the telegrapher sends the message that the governor has not granted a pardon, the hanging will go on as scheduled. From the telegrapher, we go to a shot of the telegraph pole (probably with an audio cut of the clicking of the telegraph). Then from the shot of the telegraph pole we cut to a shot of the gallows: a vertical pole approximately the same size, shape and in the same position as the telegraph pole. One image exactly replaces the other on screen.

One of the most effective uses of a match cut is in Apocalypse Now, where Coppola cuts from the spinning blades of the ceiling fan in the Saigon hotel room to the spinning blades of a helicopter deep in the combat zone. Great care must be taken in shooting both sides of a match cut. It is not enough that the objects be similar in shape, the screen size (as determined by focal length) and the position in the frame must also match. One method is to have a video tape of the previously shot scene and play it back on the director's video monitor. For precision work, a monitor with an A/B switch allows the image to be quickly switched back and forth from the freeze frame of the video tape to the live picture from the video tap. As an additional guide, a grease pencil or chin marker can be used to outline the object on the monitor.

THE CONCEPTUAL CUT

We previously discussed the editorial cut that spans tens of thousands of years used to transition from prehistoric times to the era of space travel in Kubrick's 2001: A Space Odyssey. This is a match cut because the direction, movement, shape and screen size of the bone almost exactly matches that of the spacecraft. It is also a conceptual cut, however, in that Kubrick is using the horse as a metaphor for the very first use of a tool. The spacecraft there is the ultimate result of the first use of tools - a tool that can carry humans into space. These types of cuts are always spelled out in the script. What is relevant for the cinematographer and the director working on the set is that these shots must be pre-visualized, planned and executed with an eye towards their final purpose.

There are other types of conceptual cuts which are not match cuts. For example, in a war film, the general might say, "We'll bomb 'em back to the stone age," and slam his fist down on the table. This cut is carried over by the action, by the idea and by the sound edit. Audio often plays a role in conceptual cuts.
THE ZERO CUT

The zero cut is a type of match cut that rarely gets mentioned in discussions of shooting and editing. It is often used in action scenes.

Near the beginning of The Last Boy Scout, there is an action scene in which the character is thrown over an embankment. We see him hit the ground in a medium shot, then roll out of the way of an oncoming car. It is very high energy and it is almost impossible to see that what seems like one continuous shot is actually two shots cut together. At the moment he hits the ground, there is a cut to another shot from the same angle, same lens and same image size which continues the action.

Technically, this is something you are not supposed to do. Here, it is not intended as an editorial cut at all, it is used to stitch together two shots to make one. It was to put together two pieces of a dangerous stunt so that we see the action fall over the embankment and then think we see him just missed by a speeding car, when, in fact we are seeing a stunt man in the second shot. The same device is used several times in that particular scene.

A similar technique is used by John Frankenheimer in Ronin (Figures 5.78 through 5.80). In this case, the camera tracks with a man as he walks down a street in Austria. An extra wipes the frame (blocking it entirely for a frame or two) and the character walks on. Nothing especially remarkable about the shot. The trick is that it is actually two shots that were done thousands of miles and weeks apart. The first part of the shot was done in location in Europe and the second part of the shot is on a studio set in Los Angeles. This gives the director the opportunity to use the strong points of two locations combined into one continuous shot.

This technique is the same as is used by Hitchcock in his "one shot" film Rope — they are what made it possible for him to shoot the entire film so it appears to be one long continuous take, even though a roll of film in the camera lasts only 11 minutes. Although Rope gives the impression of one long take, it is a myth that there are no cuts at all; in fact there are a few, most of them at reel changes.