What are the tools editors use to create rhythm? This chapter introduces timing, pacing, and trajectory phrasing as the three key tools utilized by editors to shape rhythmic sequences.

Timing and pacing, as discussed in the introduction, are often confused or substituted for rhythm as a whole. Timing and pacing are also used to describe a variety of aspects of rhythm or the rhythm-making process. The words “timing” and “pacing” are sometimes used when discussing attributes of rhythm (things that films have when they have rhythm). They are also used as words to describe faculties inherent in the editor. One hears “she has good timing” or “she has a strong sense of pacing” as descriptions of intuition about rhythm. Finally, they are tools that can be used to create rhythms in the editing process. Their function as tools is the primary concern of this chapter. However, given that timing and pacing are also attributes of rhythm and faculties of editors shaping the rhythm, the functioning of timing and pacing as attributes and faculties will also be touched upon herein.

My own contribution to the discussion of the tools for shaping rhythms is the concept of trajectory phrasing. Trajectory phrasing shapes the energy and spatial organization of movements in shots and across edits into rhythms. Although trajectory phrasing is not in the everyday lexicon of most film editors, I suggest that it is necessarily deployed as
a tool in the creation of rhythms, and it therefore is also an attribute of rhythm and a faculty that editors with skills at creating rhythm have.

**TIMING**

Timing is the attribute of rhythm that arises as an editor determines when cuts and shots occur. There are three aspects of timing to be considered when discussing rhythm in film editing: choosing a frame, choosing duration, and choosing the placement of the shot.

**Choosing a Frame**

Choosing which frame to cut on is one sense of timing. It creates the specific frame-to-frame relationship of two shots and their contents. “Etymologically the word [rhythm] probably implies ‘not flow, but the arresting and firm limitation of movement’ (Jaeger, 1959).”¹ Timing is the tool at work in firmly limiting the movement of one shot by

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¹ Jaeger, 1959

**FIGURE 3.1**

In the days when “cutting film” meant actually cutting pieces of film, you could hold up a film strip to the light and choose the precise frame on which to cut. The process of editing was altogether more physical, and, when holding those strips of film, you actually had the sensation of holding time in your hands.

[Photo credit: The Kobal Collection].
choosing the precise frame on which to begin and end it. If, for example, the editor is constructing a conversation in a shot–reverse shot configuration, and there is a shot in which a man looks up and then smiles, followed by a shot in which a woman looks away, the editor might choose to cut on the frame before the smile starts. In that case the scene would play as “the man looks up, then the woman looks away.” As little as one frame later, the smiling becomes perceptible, so cutting exactly one frame later would make the scene play as “the man looks up and starts to smile, but the woman looks away.” A world of different meanings can unfold if the woman seems to look away because the man is smiling or because the man looked up.

Choosing Duration

“Timing” frequently refers to duration or the length of time a shot is held. It is the aspect of rhythm being referred to when one says something feels long or short. Holding a shot for a long time or for what feels like a long time are both functions of timing. Choosing duration is distinct from choosing the precise frame on which to cut because, although a shot may change meaning quite dramatically by holding or dropping one frame, the feeling of its duration is not really affected by one frame (which is only 1/24 of a second). A 10-second shot will feel long if it is juxtaposed with a series of 1-second shots. The same 10-second shot, used in the same context, will still feel just as long if it is actually only 9 seconds and 20 frames. And the same 10 (or so)-second shot will feel quite short if juxtaposed with a series of 60-second shots. The feeling of a shot’s duration is created by the relative durations of the shots near to it and the concentration of information, movement, and change within it.

Choosing the Placement of a Shot

The decision about where to use a shot is also called timing. This sense of timing refers to “where” as in when to reveal the punch line or the surprise. It is related not so much to duration or precise frames; rather, it shapes rhythm in broader strokes by determining trajectories and emphasis. If, for
example, the plot is moving toward the discovery of a clue, does the detective stumble over traces of gunpowder in the foyer or discover a smoking gun first? The movement of the plot—direct or indirect—is determined by the timing of where the shots are placed. The detective’s sequence of movements reveals something of his character, such as how astute or dimwitted he seems to be, by placing shots in an order that makes him move directly to the clues or meander, bumbling, toward them.

When as in where is also a way of placing emphasis by repetition. If an editor has standard coverage for a scene (a single on each character and a two-shot of both characters), she will be able to use patterns of repetition of shot setups expressively. A common pattern, for example, is to alternate between the singles of the two characters as they discuss something and then to cut to the two-shot, introducing change, at the moment at which their discussion is resolved. This sense of when as in where uses shot setups in a choreographic pattern to express the underlying emotional trajectory of the scene. This aspect of shaping rhythm will be discussed more thoroughly in the chapter on common scenes.  

Movement qualities within shots can also work with patterns of repetition for emphasis. An editor does not have to repeat three gestures of hesitation exactly to emphasize hesitancy; she can cut together a hesitant glance, a hesitant reach, and a hesitant step to place a big emphasis on hesitancy, or she could drop all three of those shots and go straight to the smoking gun to remove any hesitancy from the detective’s timing.
All of the uses of timing—the precise frame on which cuts are made, the duration of shots, and the sense of timing as in *where* a shot is placed—intersect with one another and the other tools of rhythm: pacing and trajectory phrasing. Separating and identifying these things may have some value for understanding the processes of cutting rhythms. At the very least, all of these uses of the word “timing” can be turned into specific questions an editor can ask: Which shot where? For how long? On which frame do I cut? All are, in part at least, timing questions.

**PACING**

Pacing is a felt experience of movement created by the rates and amounts of movement in a single shot and by the rates and amounts of movement across a series of edited shots. Pacing as a tool for shaping rhythm defines the resulting pace of a film.

When Bordwell and Thompson describe “pace” in *Film Art*, they define it as “what musicians call tempo.”³ *The Grove Dictionary of Music and Musicians* tells us that:

> The system of musical tempo clearly has its origins in the functions of the human body and mind. It is related in particular to the speed of a normal heartbeat, between 60 and 80 beats per minute; on either side of this lie the sensations of “fast” and “slow” …

Pacing is the manipulation of pace for the purpose of shaping the spectator’s sensations of fast and slow. The word “pacing,” like the word “timing,” is used to refer to three distinct operations: the rate of cutting, the rate or concentration of movement or change in shots and sequences, and the rate of movement or events over the course of the whole film.

**Rate of Cutting**

Pacing refers to the rate at which cuts occur, as in how often per second or minute or hour. This is not just another way of saying “duration of shots,” although the two ideas do overlap. Pacing in this sense
can most easily be seen when the rate of cutting occurs in patterns; e.g., accelerating the number of cuts per minute as a chase gets closer to its climax. (In this case the durations of the shots get shorter, and the two meanings overlap.) However, pacing, as in “rate at which cuts occur,” is also a factor in the rhythm of film even when it is not patterned by design. For example, cutting frequently around a conversation may make the performances seem edgier or sharper. Here we are not looking at durations of shots directly, but at the content curve of movement within the shots and either cutting it very sharply, which creates a sense of the pace being quicker, or leaving it loose, with full arcs of movement intact, which makes the pace seem slower. Thus, the pacing, in the sense of the rate at which the cuts occur, manipulates the sensation of the movement of the conversation. Further, the rate at which cuts occur defines the rate at which new visual sensations are introduced—every cut is in itself a change, so lots of cuts make a faster rate of change.

**Rate of Change or Movement Within a Shot**

Pacing is not just a matter of the rate at which cuts occur; it also refers to the juxtapositions of rates of movement or change within shots. If the rate of change within a shot is fast paced—for example, in one 5-second shot the door opens—the vase falls over—the cook screams—and the burglar slips out, and that shot is juxtaposed with another 5-second shot in which the thief is cornered—he kicks the cop—he gets bitten by the dog and jumps over the wall—the pacing of the sequence may be seen as very fast, even though the cuts are relatively infrequent. (Making one cut in 10 seconds is not a “fast” rate of cutting in contemporary cinema.\(^5\)) If the editor chooses to present each of these events in its own shot, thereby making a cut every 3 seconds rather than one cut in 10 seconds, she would make the rate of change slow down—these events each shown in a single 3-second shot would take 24 seconds, not 10. The editor would have sped up the rate of cutting, but the overall effect would be of slowing the pacing.
However, it would not necessarily be correct to assume that the sensation of slowing the pace arises solely from a sequence taking more time. The actual reason the pacing could feel slower may arise if the full action of each movement is being revealed by putting in a 3-second shot of each "gesture." When it is possible to see the whole of an action—its beginning, middle, and end—and not just the height of its activity, a certainty about source and direction of movement replaces the uncertainty that makes one feel as though things are moving fast.

Rate of Overall Change

Pacing also refers to movement of the overall film. A film's pacing may be the rate at which events move in the film or the rate at which
movement of images or emotions occurs in the film. Each of the following three examples creates a fast pace through a different aspect of high concentration of movement overall.

1. A film with a series of moving camera shots traveling around a breathtaking array of characters, alluding to complex and fraught interpersonal relationships, has a high concentration of quick movement in visuals and emotions, which creates a sensation of fast pacing. At the same time, it has only one plot event, such as “the house guests settle in.” But this will feel like a fast-paced film even though there are few events, because the rate of physical and emotional movement is high (Fig. 3.4).

2. A film with rapid dialog, relatively infrequent cuts, not much camera movement, but a rapid series of events or changes in the character’s fortunes can still be considered to have rapid pacing (Fig. 3.5).

3. A film with lots of cuts, timed to maximize the energy of the movement trajectory and the collision of the movements between shots, but with basically no movement of events or no emotional change, as in a music video, may also be considered fast paced (Fig 3.6).

In each of these three films the high rate of overall movement or change and the consequent sense of fast pace are achieved through manipulation of a different aspect of pacing. The same three aspects of pacing could each be employed in the opposite manner to make a film’s overall pace slower.

In general, all three of these uses of the word “pacing” interact with one another to determine a film’s pace. Pacing is very important, especially for the creation of sensations of time, but rhythm also has other methods with which to shape time, energy, and movement.
FIGURE 3.4
Robert Altman’s 2001 film Gosford Park feels fast paced because characters, camera, and emotions all move quickly, but the plot doesn’t move quickly, and it is not cut especially fast. The furious rainfall, the pressing forward against the rain of the figures under the umbrella, and the alert focus of the two attendants on either side of the car all make this frame feel fast paced, but all that is happening is people getting into the car. [Photo credit: USA Films; The Kobal Collection]

FIGURE 3.5
Cary Grant and Rosalind Russell in His Gal Friday (Howard Hawks, 1940). With its rapid-fire dialog and quickly changing plot events, His Gal Friday is well known as a fast-paced film, even though there are almost no camera moves and, by today’s standards, cuts are infrequent. [Photo credit: Columbia; The Kobal Collection]
"Trajectory phrasing" is a term I have devised to cover an area of editing rhythms that is not precisely addressed by the terms “timing” and “pacing.” Trajectory phrasing describes the manipulation of energy in the creation of rhythm. The word “trajectory” means “the path described by a body moving under the action of given forces.” So “trajectory” describes a combination of the direction of a movement and the energy that propels it. My term “trajectory phrasing” describes joining together the movement trajectories found in different shots with particular attention to the shaping of the flow of energy between them. The three operations that trajectory phrasing describes are making smooth links or abrupt collisions of energy and direction, choosing from among different energetic variations done by performers in different takes, and creating emphasis points, or accents, by manipulation of the trajectory of movement. These three operations will be broken down in greater detail.
in a moment. But first, before looking at the tools for shaping the flow of energy, the word “energy” itself requires some definition.

My use of the word “energy” draws, in part, on movement analysts Rudolf Laban and Irmgard Bartenieff’s ideas about Effort. Effort, as described in their in-depth study of movement, roughly translates as the attitude and intention behind movement that informs the way it is done.⁷

The kind of Effort with which a person moves is what he or she means or intends with his or her movement. A punch means aggression, violence, forceful intentions, if its Effort is aggressive, violent, and forceful. A punch can be playful; in other words, it may originate from a playful state of mind, and the Effort that propels it will be entirely different. It may move along the same spatial pathway as an aggressive punch, be a similar speed and have the same shape, but its Effort, or energy, will tell us that it means something different. It can even be abstracted completely by changing its energy. A closed fist moving limply is not seen as a punch. It is an abstract movement, unless the narrative context explains the energy in some way. For example, a dying man may move his closed fist in a straight line quickly but limply to give his grandson a magic bean that he has hidden in his hand. We wouldn’t see that as a punch. The energy has changed it completely, and the narrative context has explained the change.

Energy is inseparable from movement and made visible through it.⁸ However, although the energy cannot be separated, as in extracted, from the movement, energy can be described separately (as above) from movement’s temporal and spatial properties. The three examples of punches—the aggressive, the playful, and the limp movement in the shape of a punch—each describe a different trajectory and stress. Although the spatial and temporal organization may be similar in all three, they each use a different energy, and therefore each has a different meaning.
Dance theorist Sandra Horton Fraleigh describes the inseparability of movement from its energy both in the performance of the movement and in the perception of it.

The dancer’s movements are workings of her mind, will, intuitions and imagination. … The audience perceives her dance through her movement as it conveys her intentions. In short, they see what she does and see the thought in it—not behind it or before it. If she moves softly they see softness, if she moves sharply, that is what they see.9

This quote concerns the movement of a dancer, but the same method of perceiving movement intentions can also be applied to naturalistic movement of actors in a drama or characters in a documentary. For an editor, the implications of this are that she cannot just shape movement in time. She must also phrase its energy to make the rhythms of the film congruent with the intentions of the movement of the film. For a live dancer, actor, director, or choreographer, trajectory phrasing is simply shaping flows of movement energy and direction

PRACTICAL EXERCISE

Time, Space, and Energy: Part 2

Using the same scenario set up in Part 1 of this exercise in the previous chapter, a third person now has a chance to direct the scene. The only direction he is allowed to give is of energy, but he has the whole of the expressive range of energy, or “effort,” as described above, to work with. The actions of the performers have to be the same—sit and read, walk in, look up, etc., but the director may now apply adverbs, words that describe actions, to the movements—as in “shake your head lightly, indirectly, with the intention of flirting” or “shake your head heavily, slowly, with the intention of resisting.” Once again the emotion and the meaning of the scene will change and illustrate the way an editor shapes the meaning of an exchange through the selection and juxtaposition of various takes, performances, or shots with different energy qualities.

At this point in the exercise everyone will notice that time, space, and energy are really difficult to separate. In fact, they work cumulatively. You can manipulate time fairly discretely, but any manipulation of space will necessarily also change time because it will take longer to go from point A to point B if you have set point B farther away. Or the character will have to travel more quickly. Either way, longer (duration) or more quickly (speed), time is being manipulated, too. Energy cannot be expressed separately from time and space, and changing the instruction to the performers regarding their use of energy will necessarily change their use of time and space. Looking away dejectedly might involve just a small shift of the eyeballs, whereas looking away furiously might be a fast twist of the whole spine.

The editor receives material, shots, that already contain some fixed aspects of time, space, and energy. Her job is to arrange and juxtapose these aspects, using timing, pacing, and trajectory phrasing, into sequences of affective rhythm.
during performance. For the editor, trajectory phrasing in film editing is the shaping of flows of movement energy and direction by choices of takes and cuts.

As with timing and pacing, there are a number of operations that constitute trajectory phrasing: linking or colliding trajectories, selecting energies, and stress.

**Linking or Colliding Trajectories**

Trajectory phrasing has a spectrum of possibilities from matching trajectories to colliding trajectories. The question, Should the connections be smooth or abrupt? is one consideration in the shaping of trajectory phrasing. Or, to paraphrase the argument that went on between the Soviet montage theorists Eisenstein and Pudovkin, should the edits create “linkages” or “shocks”?

Practically speaking, the smoothness or abruptness of a movement trajectory shaped by cutting depends on the relationships created by juxtaposing visible aspects of movement such as screen direction. For example, a smooth cut is one in which movement from right to left in one shot is matched with movement from right to left in the next shot. A cut in which movement from right to left is “collided” with movement from left to right, or simply unmatched in spatial organization and energy, is a little shock. Eisenstein includes graphic directions, scales, volumes, masses, depths, close and long shots, darkness and lightness in his list of visual elements that can be collided (or, as Pudovkin might perhaps prefer, smoothly linked).

**Selecting Energy Trajectories**

The phrasing of the movement energy is also a matter of selecting shots for the qualities of energy they contain and thus choreographing a sequence of energy flows.

In a contemporary film that has Hollywood-style coverage, a cut may be a “match cut,” a “match on action,” or a collided cut, but it is not
CHAPTER 3: Timing, Pacing, and Trajectory Phrasing

FIGURE 3.7
Joel Grey in Cabaret (Bob Fosse, 1972). In the film Cabaret, Editor David Bretherton often makes very hard cuts between scenes, slamming together the energy in images to make surprising connections between ideas and create a physical jolt or shock for the audience that underlines the film's themes and makes them palpable experiences of the motion and emotion of life in Berlin in the 1930s. [Photo credit: ABC/Allied Artists; The Kobal Collection]

FIGURE 3.8
Kristen Scott Thomas and Ralph Fiennes in The English Patient (Anthony Minghella, 1996). Editor Walter Murch favors smooth linkages of movement eneriges in The English Patient, which help him to underline the lyrical aspects of the film and the connectedness of the central characters to each other on a nonverbal level. [Photo credit: Tiger Moth/Miramax; The Kobal Collection; Phil Bray]
just a choice between linkage and collision; it also contains choices from among an array of energy quality possibilities.

For example, here is a scenario in which the editor is choosing to match cut: a man and his wife sitting on the sofa have a small disagreement over a book they are reading together. She gets up and moves to the kitchen, he follows. We will call the “getting up and moving to the kitchen” the movement trajectory of each character, and the two of them getting up and moving to the kitchen will be the movement trajectory of the scene. Imagine that in this particular example the coverage includes a shot of the woman moving with a degree of hesitancy and one of her moving with a greater degree of confidence. Same movement, different energy or attitude behind it. The coverage also includes shots of the man getting up with difficulty and other shots of him springing off the sofa. Any of these shots can be cut together to match (link smoothly) but the rhythm of the scene is shaped by the choice of juxtapositions of movement energy. Is her move to the kitchen hesitant, whereas he springs off the sofa to follow her? Or is her move confident, whereas he moves with difficulty? Or perhaps her hesitation and his difficulty will be cut together to create the trajectory that best expresses the movement of emotions in the film.

These same principles apply in cutting of, for example, documentaries, in which there is no Hollywood-style coverage. Cutting the movement energy of events, information, colors, textures, ideas, emotions, and so on is a process of shaping the flow of energy found in the various shots into the single flow of movement and energy over time known as “rhythm”.

**Stress**

“Stress” is emphasis created in rhythm by the use of the energy in a shot as an accent. Choosing where to place the stresses or the accents by use of energy is part of trajectory phrasing. It is the punctuation of the cine-phrase. As it says in *The New Princeton Encyclopedia of Poetry*
Accent in the sense of emphasis is the more general term, ‘stress’ is the more precise … stress can denote intensity as opposed to pitch or length.” The definition of rhythm in music in *The New Grove Dictionary of Music and Musicians* doesn’t cover everything about rhythm in film editing, but it does explain the importance of stress when it says, “duration and stress—in other words constructions in time and gradations in strength—are the central determinants of rhythm, its constituent factors.”

Stress refers to the rise and fall over time of intensity of energy. Accents of stress arise from patterning of energy. In a choreographically shaped phrase of edited material, a 2-second shot may either be a 2-second close-up of a scream or a 2-second wide shot of a sigh. The shots are of equal duration, the rates of movement or change within them are comparable, but the stress (effort) they contain and the stress (emphasis) they create are different. Both the shot size and the energy being expended within the shot contribute to the energy accent it makes.

Trajectory phrasing is something spectators feel in a very immediate way. We feel the movement flows that are created across shots without conscious processing of smoothness or abruptness, hesitancy or confidence, stress accents or patterns of accent, because the recognition of...
flow of movement energies is done by the spectator intuitively, using his mirror neurons and kinesthetic empathy (as described in Chapter 1). The spectator’s immediate feeling of a trajectory phrase is the result of many hours of intuitive work by the editor in which she cuts the flow of movement energy into one trajectory or another until her own mirror neurons and kinesthetic empathy light up with the feeling of the “rightness” of the flow.

**SUMMARY**

Timing, pacing, and trajectory phrasing are the tools that an editor employs when cutting rhythms. Each of these three is actually a term covering at least three editing operations to do with choices made in shaping movement and energy over time. The creation of rhythm in film editing will generally rely on all of the tools or operations described herein being employed simultaneously or in close alternation because, as Laban and Bartenieff suggest,

… rhythm is not just a duration of time, accented by stresses. It is also the result of the interaction of Effort combinations with variations in spatial patterns.\textsuperscript{12}

Having looked at the sources of knowledge about rhythm, some of the choreographic processes at work in creating it, and the tools an editor has for shaping it, I will turn now to the purposes of rhythm in film.
ENDNOTES


2. Interested readers will also find expansive discussion of the idea of repetition as an expressive motif in Film Editing: the Art of the Expressive by Valerie Orpen.


5. In his book Film Style and Technology: History and Analysis, Barry Salt includes a study of average shot lengths in narrative drama films over time. David Bordwell picks up on his findings and develops them in an article published in Film Quarterly in 2002. Bordwell says, “In 1999 and 2000 the ASL (average shot length) of a typical film in any genre was likely to run three to six seconds.” Bordwell, D., “Intensified continuity: visual style in contemporary American film—critical essay,” in Film Quarterly, p. 16.


7. For a thorough explication and contextualization of Effort, see Bartenieff, I., with Lewis, D., Body Movement: Coping with the Environment.

8. “Physicists recognise the existence of a universal interaction of forces such that the separation of entities into discrete and autonomous units is called into question, and explorations of the microscopic constituents of matter suggest (sic) that there are no irreducible bodies in the world, simply ‘modifications, perturbations, changes in tension or energy and nothing else’ (1959, 337; 1911, 266), no things but only actions (1959, 705, 1913, 248) or movements (1959, 707; 1913, 249–50).” Bogue, R., Deleuze on Cinema, p. 16.


12. Bartenieff, I., with Lewis, D., Body Movement: Coping with the Environment, p. 75.