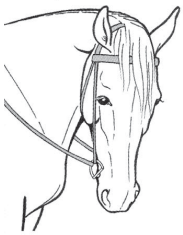

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How Horses Work

Installment #2: Untracking

by Deb Bennett, Ph.D.

The Meaning of Untracking

Untracking—asking the horse to step under the body-shadow with the inside hind leg—is a physical maneuver fundamental to all horse training. As with the head-twirling or "jaw flexions" that we discussed in the first installment, the benefits of untracking were discovered in ancient times. Its deliberate use by horse handlers and horse hunters might, in fact, go all the way back to the first encounters of mankind and horse.

The handler who can untrack the horse obtains control over the horse. When we mention "control," we are always really talking on two levels: the surface level that involves the horse's physique, and the deeper, interior emotional, mental, and spiritual levels. This is a very useful thing to know: that when you ask a horse to step through certain physical actions in the right way, the doing of those actions tends to cause the animal to pay attention better, to become calmer, and to feel a lot more like doing what you'd like to do instead of what he might have been planning on doing. When working with horses, we often address the outside of the animal in order to change conditions on the inside. Untracking creates desirable conditions on the inside of the horse probably better than any other physical action that we can ask him to do.

The first time in a foal's life that he is asked to untrack, it will be by his dam. Maybe he comes in a little wrong, a little uncomfortable for her, when he wants to nurse. So she swings her head and neck around there and bumps him on the flank so that he'll step over. He doesn't let go of the nipple; he just shifts his rear end. While he does that, he also gets a lesson that affects him psychologically for the rest of his life: stepping over behind means to soften up, to submit.

This lesson is reinforced later as he grows up in the herd. The grumpy old boss-mare will glare at his flank, or if necessary bump him, nip him, or even kick him there, if he so much as thinks about cocking his hindquarters toward her. The human handler is well advised to do the same, for just as an offer to untrack indicates a cooperative attitude and mood, the opposite gesture of widening the hind stance and aiming the haunches toward the handler indicates aggressiveness, self-protectiveness with a desire to flee rather than focus and learn, and the horse's (always erroneous) belief that he, not the human, is running the situation.

The Physical Purpose of Untracking

Literally hundreds of photos showing how, when, and why to untrack the horse have been published over the years in *The Eclectic Horseman*. Yet many riders the world over have never heard of untracking. I find this to be particularly amusing in Europe, where the technique was once widely publicized and understood—indeed, it is the very foundation, both historically and in practice, for the shoulder-in. If you can read French, you will find many references to untracking in the "École de Cavalerie," a training manual written in the 18th century by François Robichon de la Guérinière, the man who is usually given credit for inventing the shoulder-in. When this old master speaks of "engaging the horse's hindquarters," he does not mean (as many people today interpret the phrase) "asking the horse to take longer hind steps." This reading is a very damaging modern misinterpretation. Again and again in his writing, Guérinière advises the student to untrack the horse—"to cause the horse to step more narrowly behind....with an oblique circular motion."

It is important to remember that none of the exercises practiced by the old "classical" masters was ever shown to a judge. The reason for this is very straightforward: there were no horse shows in the modern sense of the term. There was no agreed-upon rule book. There were no registries, no show associations, no breed clubs. There were no "certified" judges. In short—nobody in that era "practiced for a show" as many riders now do. Going to shows was not their motivation.

Those old riders did practice, however—in the same sense that a doctor "practices." In other words, they lived it—they were "on call" with it 100% of the time—just as we must be if we want to succeed. With this philosophy, if you do any maneuver or exercise, you, like the classical masters, will be doing it for one of three purposes:

1. To cause the horse to develop physically so that he can better carry a rider's weight—so that he can stand the rigors of a military campaign, or of being used for bullfighting or other cattle work, or for transportation, racing, or cross-country riding.

2. To cause the horse to develop physically so that he will stay sounder longer in whatever type of work he is destined for.

3. To cause the horse to develop physically so that he becomes more beautiful, both in appearance and in movement.

Distilling these purposes down, we find that the main intent of all "classical" exercises is physiotherapeutic. "Physiotherapeutic" means "beneficial for the physique." We do these maneuvers because they help the horse to develop the very peculiar flexibilities and muscular development that he needs in order to be a top-notch riding horse. The development of a finished riding horse not only goes far beyond, but is different from the "natural" physique of a mustang or a green colt. That is why it is "peculiar." For example, the ridden horse needs to be disproportionately stronger in the muscles which support the freespan of the back; much stronger through the haunches; more flexible in all the joints of the back, neck, shoulders, and hind limbs. The regular practice of untracking, in all its many forms and variations, greatly helps to produce this needed physical development.

A developed horse carries a rider with no strain. It is easy for him. And—never forget—the physical level is linked to the deeper levels: for when the horse is comfortable physically, he will be far more likely to remain attentive, interested, focused, and confident.

Picture Essay: The Anatomy of Untracking

Note to the reader: This is one of those images that deserves to be photocopied and then hung on the refrigerator door or the door to your tackroom. The information it contains relates to virtually every area of horsemanship, from colt-starting to finishing.

Fig. 1. Skeletal view of a horse in the act of untracking. He is stepping under the body-shadow with the left hind leg. The act of untracking causes the vertebral chain and rib cage to flex laterally.

Note first that the so-called "even bend from poll to tail" is an anatomical impossibility. Thanks to the way the individual joints are engineered, there are two zones along the length of a horse's spine that have zero, or almost zero, capability to flex laterally. One is the joint between the atlas and axis vertebrae: absolutely no lateral bend can be effected at this joint (if you looked at the last installment in this series, you will know that rotation is the one and only movement that is permitted between axis and atlas). You can take a ruler to this drawing and find that there is a straight line extending from the midline of the atlas all the way through the midline of the axis. The "turnover" part of a horse's neck cannot bend laterally at all.

The other place along the horse's spine where lateral bending is absolutely forbidden by the design of the joints is from about the middle of the lumbar span—the 3rd lumbar vertebra—all the way back to where the tail attaches, at the rear end of the sacrum. Again, if you take a ruler to this image you will find that this segment of the vertebral chain forms a straight line. Lateral flexibility is possible, but only to a limited degree, between the first three lumbar vertebrae; so the whole spine from the end of the rib cage back to the dock of the tail is less laterally flexible than the thoracic chain. The lumbar section of the horse's back can swing laterally like a gate hinged at the back of the rib cage, but it can't curve much.

Lateral flexibility is "legal" everywhere else along the spine, but even then, the curvature is not absolutely even. The thoracic vertebrae that form the front end of the rib cage, from just behind the base of the neck at cervical no. 7, through about thoracic no. 6, send up tall dorsal processes ("spines") that structure the withers. Although this zone can flex, it has a heavy covering of ligaments which stabilize it and make it less flexible than the rest of the thoracic chain.

The rear part of the thoracic chain—where the rider sits—is fairly flexible. Never let anyone tell you that a horse's back is "rigid." The dictionary tells us that "rigid" means "stiff like the top of a table." The horse's back is certainly not like that. Instead, it is designed for an elastic flexibility similar to a diving board or a rather thick whipstock.

The neck and the tail are the most flexible parts of the horse's vertebral chain. The tail is composed of small vertebrae shaped like spools which can bend in almost any direction, or even curl or kink.

The neck has flexibilities that are numerous, interesting, and important, and we will be devoting a separate article to those. However, you may note from this drawing that neck joints which are designed to permit lateral flexion—the poll joint and those behind the axis—can and do contribute to a lateral bend.

To return to the thoracic part of the back, observe that each thoracic vertebra supports a pair of ribs. The ribs are flexibly articulated to the vertebrae at the top. Below, they are attached to each other and to the horse's sternum by short, flexible rods of cartilage. This complex system of long, narrow ribs and multiple small joints creates the rib cage, which is a flexible basket. The main job of this basket is to protect the heart, lungs, and other vital organs, and at the same time to permit breathing. When a horse breathes in, the ribs fan, moving outward and forward. When he breathes out, the ribs flatten back down again, moving inward and backward in unison.

Assuming a properly-fitted saddle, the rider's weight bears upon this flexible basket and never directly upon the vertebral chain. Thus, anything that affects the position or the mobility of the basket can be felt by the rider. When a horse untracks on the left and thus bends to the left, it is not possible for the rib cage to merely bend in one plane, like an accordion, with the individual ribs of the left "inside" compressing closer together and those of the right "outside" stretched farther apart (gray

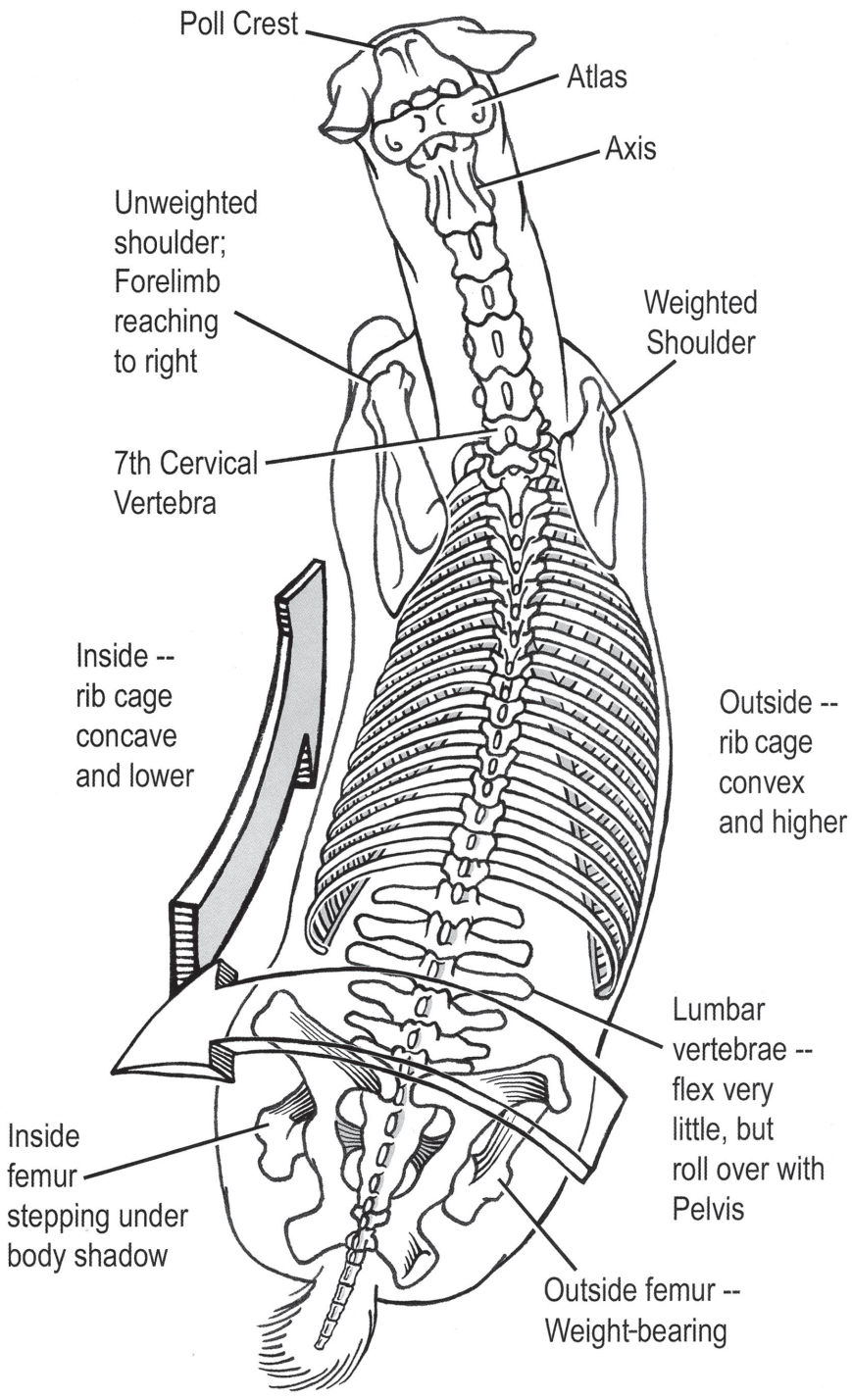
arrow). At the same time the inside ribs compress, they also roll downward, while as the outside ribs stretch apart, they rise upward.

In part, this action is mandated by the design of the articulations between the ribs and the thoracic vertebrae. However, when we ask a horse to untrack we are adding to it. For when he untracks on the left, his left hind leg is reaching toward the midline—even all the way to the midline. In order to step that narrowly, the horse must roll his pelvis, and with it, the lumbar and thoracic vertebrae, as shown by the crystal arrow.

This is interesting because, as we have already learned, the one and only joint in the horse's vertebral chain where "rolling" (rotation) is designed to happen is the joint between the atlas and axis. However, the thoracic-plus-lumbar chain as a whole has enough flexibility to comfortably permit about a 30-degree twist. A horse may twist that much when he rolls on the ground, or when he's cavorting or bucking and kicks a hind foot up to one side. Note that this type of twist is "shared" among a total of 18 thoracic joints plus 6 lumbar joints in the normal horse, so that no one joint experiences more than a couple of degrees of rotatory strain.

When we ask a horse to untrack, the amount that the pelvis and the lumbars-plus-thoracics must roll amounts to a minimum, and yet it's a vital minimum, because this

Fig. 1.



is the action that, over time, gently but thoroughly "supples" the rib cage, the lumbar span, and both haunches. It teaches the horse to feel himself anchored and stable when the outside hind limb is weight-bearing. It teaches him not to lie on (delay the unweighting of) the inside shoulder. It stretches the thick haunch muscles of the hind legs. It teaches him to balance on a narrower base. Untracking is not only how to cause a horse to bend correctly as for a circle, but to do it from the rear, so that the rider stops having to drag the horse around by the head all the time. It is prerequisite to leg-yielding and to the shoulder-in. It is the key response in liberty work or in roundpenning when we want to teach the horse to come in to us at call. And it is the physical key to teaching the horse to carry himself, and his rider, straight.

There is no action in all of horsemanship more important to understand than untracking.

Fig. 2. A pair of images to show the actual one-step-at-a-time action of untracking. Both horses are in a walk. Image A catches the animal with the outside hind leg fully weighted, the inside hind leg totally unweighted and in the act of being brought forward-and-across by "an oblique and circular motion" (gray arrow). The black bar over the top of the hips shows how the pelvis and lumbar vertebrae must roll downward as the inside hind leg is brought forward. A good rule of thumb is that the weighted haunch—the haunch over the leg that the horse is standing on—will be higher.

It will not be higher at all times, though, of course, because once a horse has taken one step, why then he'll probably need to take another. All locomotion in horses goes by limbs alternately being picked up and set down:

a. A limb picks up (becomes unweighted).

b. It moves through the air (still unweighted).

c. The toe of the hoof of that limb makes contact with the ground (the limb begins to take weight, its haunch begins to rise).

d. The hoof is set flat against the ground, pressing into the ground (the limb is fully weight-bearing, its haunch is at the top of its rise).

e. The opposite limb picks up (becomes unweighted, its haunch is at its lowest).

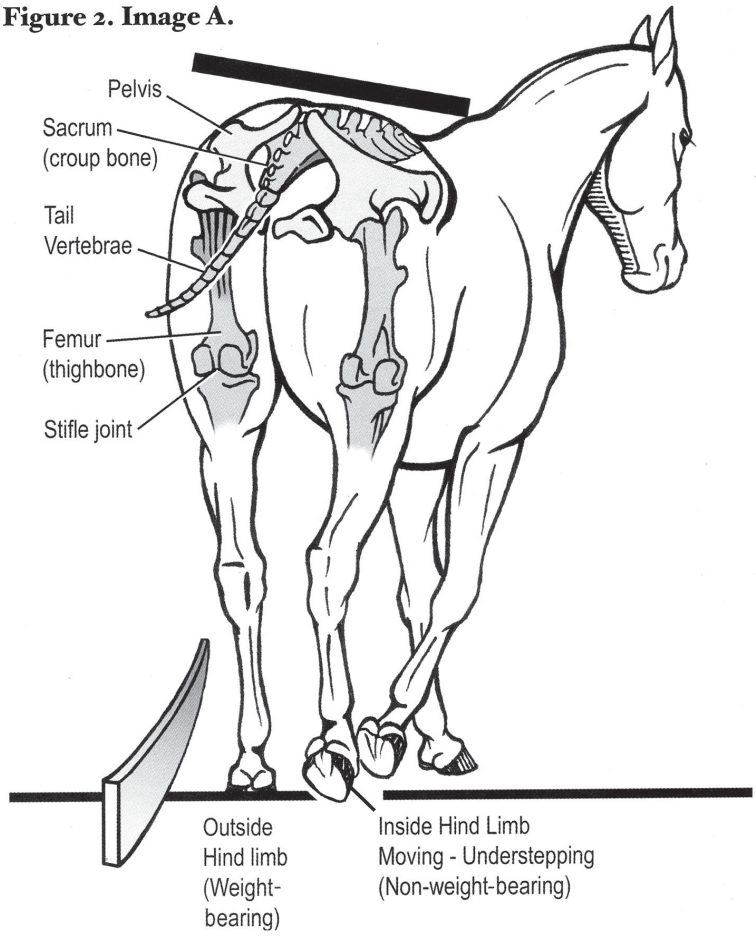
f. ….and so forth

Thus, in image B we see the horse at the moment where the inside hind foot, having reached its target under the body-shadow, has set down against the ground and become weight-bearing. This permits the outside hind leg to pick up and be swung outward (gray arrow). Thus will the haunches of this horse track a bigger circle than will the forequarter.

Note that the pelvis in B tips the opposite way from A. This is because the weight-bearing hind limb has changed from inside to outside.

The sharp reader will ask at this

Figure 2. Image A.



point, "so what happens to the rib cage then?" For in phase A the rib cage, going along with the tilt of the pelvis and lumbars, will be higher on the outside. In phase B, despite the obvious lateral bend, the rib cage rolls to the outside following the outside roll of the pelvis. The sum-total of these two actions—lateral flexion and outward rolling—essentially levels the rib cage until the horse is once again in phase A.

Thus, the feel of a horse's back when he is untracking, or when he is on a circle, is on average higher on the outside – it varies from definitely higher (when the outside hind limb is weight-bearing) to about level (when the inside hind limb is weight-bearing).

The rider needs to realize that, in order to untrack or circle well, the rib cage must be free to rise and fall from side to side like a rowboat in a swell. You can try an experiment if you like, and go at "pumping the rowboat" to make it rock more. This will work on some horses for about two minutes. After that, the horse will probably ignore you, because excessive rider movement, or any type of shoving, is irritating to him. So you should not be trying to rock the boat. Instead, do the inverse: make sure you're not doing anything to block the rise and fall of the rib cage. Are you sitting heavy on one side all the time? Are you stiff in the waist? Suppleness in the rider's waist is what permits the horse's rib cage to freely rise and fall.

The other question riders ask all the time is "how am I supposed to get the horse to step under with his inside hind leg?" My answer is to envision the gray arrow. Envision it emanating from the calf of your leg. You won't need to move your leg much. If your horse is responsive, you won't need to kick—a tiny bump or "rattle" will be plenty and eventually, more than you'll need. My belief is that horses "see" mental pictures. As soon as you have the mental picture of where the energy—the gray arrow—is going, the horse will follow that lead. You "intend"—with knowledge because you now have a clear picture of the anatomy—and the horse will pick up on your intention and make it a physical reality.

Obviously, with a maneuver as important as untracking—one that develops and becomes more subtle and refined as the horse and rider become more finished—there will be more to come on this subject as we explore its many specific applications.

Next month: The Anatomy of Straightness

Figure 2. Image B.