

*LOADING THE PROBLEM LOADER:
THE EFFECTS OF TARGET TRAINING AND
SHAPING ON TRAILER-LOADING
BEHAVIOR OF HORSES*

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The purpose of this study was to develop an effective method for trailer loading horses based on principles of positive reinforcement. Target training and shaping were used to teach trailer-loading behavior to 5 quarter horse mares in a natural setting. All 5 had been trailer loaded before through the use of aversive stimulation. Successive approximations to loading and inappropriate behaviors were the dependent variables. After training a horse to approach a target, the target was moved to various locations inside the trailer. Horses started training on the left side of a two-horse trailer. After a horse was loading on the left side, she was moved to the right side, then to loading half on the right and half on the left. A limited-hold procedure and the presence of a companion horse seemed to facilitate training for 1 horse. Inappropriate behaviors fell to zero immediately after target training, and all the horses successfully completed the shaping sequence. Finally, these effects were observed to generalize to novel conditions (a different trainer and a different trailer).

DESCRIPTORS: targeting, shaping, trailer loading, horses

There are a variety of reasons for people to load horses into trailers, including taking them to the veterinarian when they are ill, to a horse show or competition, or on vacations. Unfortunately, many horses fight during loading. They exhibit behaviors such as rearing, pulling back, head tossing, pawing, and turning sideways. These behaviors are likely to be negatively reinforced when the owner fails to load the horse (cf. Baron, 1991). The combination of a horse that fights loading and an owner who uses physical force can produce a very dangerous situation. Injuries to the trainer can include rope burns, lost fingers, broken bones, or

bruises and bleeding. Injuries to the animal can include lacerations to the head from banging into the trailer, scrapes and cuts on the legs, broken legs from falling, or even a broken back if the animal falls backwards while rearing.

Professional horse trainers agree that one of the reasons for a horse to resist trailer loading is that the animal is “afraid” of the confinement that the trailer imposes. Trailers are often dark and small with little or no room to move. They are designed this way to prevent the horse from falling while on the road. Some trailer designs are bigger than others and allow more freedom of movement. In general, the larger the trailer, the easier it is to load the horses. Nonetheless, horses are known to naturally avoid tightly confined spaces, presumably because they cannot easily flee in case of danger. This has led some horse trainers to suggest some anthropomorphic interpretations of the horse’s behavior. For example, Parelli (1993) stated that “[horses] are programmed by nature to be suspicious of anything like a dark

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hole or narrow place. No respectable prey animal would ever put himself in such a dangerous position" (p. 118). Similarly, Marten (1998) noted that "[horses] are naturally claustrophobic animals who perceive anything that represents restriction and confinement as threatening to their safety" (p. 83).

Besides a natural tendency for horses to avoid tight spaces, another often-cited reason why a horse resists loading is the horse's experiences with loading (Lyons, 1991; Rashid, 1993). People have used winches, whips, war bridles, chains, cattle prods, and a variety of other punitive methods to get horses to load. Although professional horse trainers do not openly advocate the extremely aversive methods, most of their methods of loading horses include some form of negative reinforcement and the use of punishment for inappropriate behaviors.

Most methods to teach horses to load involve successive approximations and the escalation of aversive stimulation. Training might begin by teaching the horse to pass between the trainer and an obstacle, such as a fence, making the opening between the trainer and the obstacle at least 2 m wide (Parelli, 1993), or might begin by moving the horse around the trailer by leading him towards and away from it (Marten, 1998). Other trainers used other approximations (e.g., Lyons, 1991; Rashid, 1993).

If the horse resists the trainer's prompts at any point of the successive approximations to loading, the trainer presents aversive stimulation that escalates to "match" the horse's resistance. The aversive stimulation is removed when the horse "yields." For example, the trainer might begin by raising the whip towards the horse's hip, then begin tickling the horse high on the hip with the whip, then begin giving light slow taps with the whip, increasing the firmness and frequency until the horse moves forward (Lyons, 1991). Other types of aversive stimu-

lation include swinging the end of the lead rope (Parelli, 1993); tapping the horse on the rump with the end of the halter (Marten, 1998); shaking a brown paper grocery sack, inside of a plastic grocery sack, attached to a fiberglass whip handle (Rashid, 1993); or keeping the horse moving so that it can only rest upon entry into the trailer (Kurland, 1998). Another method requires tying one end of a length of baling twine to the lead rope, and the other end is looped around the base of the horse's tail. If the animal does not move forward, the trainer begins pulling on the twine to tighten it around the animal's tail (Rashid, 1993).

Some trainers incorporate forms of positive reinforcement such as pats on the neck and verbal praise. Interestingly, some trainers directly prohibit using food during training (e.g., Marten, 1998; Rashid, 1993). However, Marten recommends that in the last loading trial, it is advisable to put a small amount of grain in the manger as an additional reward for entrance. He also suggests that people end the session on a positive note so that inappropriate responses are not reinforced.

Kurland (1998) recommends that, to teach a horse to load properly, one needs to teach the horse cues for backing up, moving forward, and turning to the right and left. She believes that each horse is unique and that methods should be tailored to each individual situation. She advocates the direct shaping of loading by successive approximations. She utilizes a clicker as a conditioned reinforcer for approaching the trailer, and then follows the click with a treat. She waits for the horse to move closer to the trailer before clicking. Then she waits for the horse to move farther and farther into the trailer. She continues clicking and reinforcing until the horse is loaded into the trailer.

Kurland (1998) and Lyons (1991) use different methods to load difficult horses, but they both believe that most loading prob-

lems are really leading problems in disguise. Although leading may be a problem for some horses, many horses that lead fine will not load easily into a trailer. For some horses, loading problems may be resolved by working on leading behaviors, but for other more difficult horses, reteaching leading skills may not be enough.

The majority of the methods described for particular horses are supported only by testimonials and rely for the most part on aversive control (cf. Pryor, 1999). No formal data have been offered by the trainers cited here to document the effectiveness of these techniques. The purpose of the present study was to develop and validate a program based on principles of positive reinforcement, as well as to create a fast and safe way to get horses to "self-load." Self-loading was defined as the trainer being able to walk the horse to the trailer, toss the lead rope over its back, say "step up," have the horse walk into the trailer, and stand still long enough for the trainer to latch the butt chain and close the trailer door. The procedure selected to bring about this loading behavior was targeting (Pryor, 1999). Targeting consists of training an animal to touch a target with its nose (e.g., a knob at the end of a pole, a black spot, etc.) each time the target is presented. The target is then used to prompt behavior (e.g., following a trainer, jumping, etc.) scheduled for reinforcement. Keller Breland and Marion Breland-Bailey developed the technique in the 1940s. They discovered that, after training a chicken to peck a black spot (as in the first piano-playing act for General Mills), they could then attach that spot to anything they wanted the chicken to peck. Breland and Burgess later introduced targeting in the Navy dolphin project at Pt. Mugu in 1963 (M. Breland-Bailey, personal communication, March 23, 2000). In the present study, the goal was to teach each horse to touch a target with her nose, and then to incrementally increase the dis-

tance of the target from the trailer's entrance until she was in the front of the trailer compartment.

METHOD

Horses

Five pedigree quarter horse mares, between the ages of 5 and 18 years, were selected for this program. They were selected because their loading required a significant amount of time (up to 3 hr) and effort. Shadow was a 5-year-old bay (160 cm long), Fancy was a 10-year-old sorrel (182 cm long), Penny was a 14-year-old sorrel (170 cm long), Sammy was a 15-year-old sorrel (167 cm long), and Red was an 18-year-old liver chestnut (165 cm long). Each horse was measured from its barrel (the most extended part of the chest) to the back of its buttocks to determine length.

All 5 horses had been forced into trailers in the past, through the use of whips and ropes. None of them had been in a trailer for 6 months prior to the beginning of the training sessions. According to our reports, none of the horses had traumatic experiences while riding in trailers (e.g., falling, getting into a wreck, very rough rides). Red and Sammy, however, had been severely beaten in the past by previous owners during saddle training. All 5 mares had been boarded together at various times.

Setting and Materials

Sessions were conducted in a field where 4 of the horses were boarded. The 5th horse was walked to this location for each session. The horses were trained individually. Horses not being worked with were confined in a separate field away from and out of sight of the trailer. Two trainers were present at each session. One person handled the horse while the other took data, delivered reinforcers, and recorded other observations. All 5 horses were familiar with both trainers.

A two-horse, straight load, step-up trailer was used. The trailer had a butt chain, as opposed to a butt bar, that latched to the divider to keep the horse in the trailer while the trailer doors were open. The side windows were kept open during all training sessions. Both rear doors of the trailer were open during training sessions. The trailer was painted white, both inside and out. The trailer dimensions were 270.5 cm long (184.1 cm from opening to manger), 184.1 cm high, and 143.5 cm wide, with a divider in the middle (each side being 71.7 cm wide). The step-up height was 25 cm to 30 cm, depending on how flat the ground surface was. The trailer was attached to a truck during training sessions to keep it from rolling forward when the horse stepped into it.

A railroad tie, measuring 20.3 cm wide and 15.2 cm high, was used as an extension of the trailer's deck. It was laid flat on the ground against the back of the trailer, making the trailer floor 290.8 cm long (204.4 cm from opening to manger).

A red cloth pot holder (12.7 cm by 12.7 cm) tied to a 45.7-cm string was used as the target. Food items used as reinforcers included pieces of carrots, apples, vanilla wafers, sugar cubes, crackers, bread, and sweets. Additional equipment consisted of halters, cotton lead ropes, tape, and a handheld clicker. No whips, bits, or other potential punishers were present. A videocamera was used to record each session. The camera was placed far enough away from the trailer as not to distract the horses.

Training sessions were conducted between 3:30 and 5:30 p.m. each weekday and between 12:00 and 2:00 p.m. on weekends. Sessions were not conducted within 2 hr after feeding times. Sessions lasted approximately 15 min, and each horse had one training session per day.

Measurement

During baseline and training sessions, measures were taken on how much of the

horse's body entered the trailer. The trailer-loading behavior chain was broken down into eight steps: (Step 1) the horse approached the trailer to a point 3 m or further from the entrance; (Step 2) the horse approached the trailer to the entrance (within 1.5 m); (Step 3) the horse approached until the head and neck were in the trailer; (Step 4) the horse approached until the front legs were in the trailer; (Step 5) the horse approached until over half the body was in the trailer; (Step 6) the horse approached until three legs were in the trailer; (Step 7) the horse approached until four legs were in the trailer, but she remained in the trailer for less than 5 s; and (Step 8) the horse approached and loaded completely (all four legs in the trailer and she remained in long enough for the butt chain to be latched and the door closed).

Data were also taken on seven other behaviors of the horse during sessions. *Freezing* was recorded every time the horse planted her front feet and refused to move forward when gently pulled by the trainer. A *head toss* was recorded when the horse jerked her head up and away from the trailer. *Rearing* was recorded any time both of the horse's front feet left the ground simultaneously. *Standing* was recorded when the horse came to the front of the trailer (within 1 m) but did not move forward into the trailer when the trainer said "step up." *Turning* was recorded when the horse positioned her body so that she was no longer aligned straight facing the trailer entrance. *Getting into the trailer* was scored when the horse put all four legs into the trailer but did not stay in long enough for the butt chain to be latched. *Loading* occurred when the horse put all four legs into the trailer and stood long enough for the butt chain to be latched and the door closed.

The number of prompts given and the number of leads were also recorded. A *prompt* was a verbal statement, "step up,"

given by the trainer when the horse was standing within 1 m of the trailer and was lined up straight in front of the trailer. A *new lead* was counted any time the horse was led away from the trailer and then led back again.

During target training sessions, data were taken on how long it took for the horse to respond when presented with the target. There were three categories: responds within 5 s, responds after 5 s, and no response. A response was counted as within 5 s if the horse started moving towards the target within 5 s of target presentation. A response was counted as after 5 s if the horse was looking towards the target but did not start moving towards it within 5 s. A “no” response was recorded when a horse did not respond to the target at all; that is, when the horse looked away from the target, started to graze, or walked off.

Reliability was calculated by comparing the live records of an observer against the records taken from a videotape by the trainer. The smaller number of occurrences per session was divided by the larger number of occurrences per session and multiplied by 100%. Reliability was 100% across sessions and was calculated for 25% of each experimental condition for all behaviors of each horse.

Procedure

Baseline. Baseline sessions were conducted once a day and lasted for 5 min each. The horse was led to the trailer and prompted to “step up.” If the horse was standing aligned in front of the trailer, a prompt was given every 5 s. If the horse turned her body so that she was no longer aligned with the trailer, the trainer led her away in a circle and then back to the trailer (a new lead). If the horse froze and did not approach the trailer, the trainer walked the horse in a circle and attempted the lead again. If the horse froze again and refused to move forward, the

trainer prompted the horse to back up 10 to 15 steps, if space permitted, by pushing the lead rope towards the horse’s chest and saying “back.” Head tossing and rearing were ignored.

Target training. A clicker was used to shape the horse’s touching the target with her nose. The sound of the clicker was paired with food presentation (20 to 30 times per day for 2 days) before target training began. This allowed the experimenter to use the sound of the clicker as a conditioned reinforcer.

Target training began after the fifth session of baseline for all the horses. Sessions consisted of 20 trials and took place in an open field. During each trial, the horse was presented with the target. If the horse touched the target, the trainer activated the clicker during the touch and immediately delivered one of a variety of different food items. The target was originally placed 0.3 to 0.6 m in front of the horse’s nose. This was done to ensure that the horse would come in contact with the target fairly quickly in the beginning. Once the horse was reliably touching the target when presented within 0.3 to 0.6 m from the horse’s nose, the target was moved to various locations in the field close to the horse. It was placed on the ground, in trees, on fence posts, and in a variety of other places. When the horse was targeting consistently (80% of the trials within 5 s over two sessions), the target was then moved to a different location before each trial. When the horse was following the target to various locations, a cue (the word “touch”) was added. If the horse was not orienting towards the target, began grazing, or walked off, a no response was marked and a new trial was started. A horse could move on to trailer training only when she reached a criterion of 90% of responses within 5 s over five sessions.

Trailer training. During each trial, the horse was led to the trailer by one trainer.

The second trainer held the target just inside the trailer. The horse was prompted to “touch” by the first trainer. When the horse touched the target, the second trainer activated the clicker and delivered a food item. The horse was then prompted to back out of the trailer, and the trainer led the horse away from the trailer. The horse was then led back to the trailer, and the second trainer moved the target forward approximately 0.3 m into the trailer. The position of the target was determined by the horse’s behavior during baseline. The target was initially positioned at the point in the trailer where most of the animal’s baseline responses had occurred. The target was moved forward after each lead, as long as the horse responded to the prompt, “touch.” If the horse did not move forward towards the target or backed out of the trailer before the target had been touched, the first trainer led the horse away from the trailer and another trial began. In this case, the target was not moved farther into the trailer. The target remained in the same position until the horse responded after one prompt and did not back out of the trailer until the target had been touched.

When a horse was consistently getting into the trailer, an extension was introduced. The extension was added because the horses were long enough to reach the front of the trailer without putting all four legs in. The extension was designed to make the trailer long enough that the horse would have to put all four legs in the trailer to reach the target. The extension was placed flat on the ground up against the back of the trailer. It was secured in place, so it would not move when stepped on, by closing the trailer doors slightly so that the extension was held firmly on the ground.

When a horse began loading after one prompt and remained in the trailer for at least 10 s, the butt chain was latched, but the trailer door was left open. After 10 to

15 successful trials with just the butt chain latched, the trainer began closing the door.

When a horse was loading consistently after one prompt for several sessions, the trailer extension was removed. After a few loading sessions without the use of the trailer extension, training loading in the right side began. When the horse was loading on the right side of the trailer after one prompt, the horse was then switched to loading five times in the right side, five times in the left side, five times in the right side, and five times in the left side. When a horse was loading into either side of the trailer after one prompt, she was then turned over to another trainer to load. The horse then progressed to loading into a different trailer. When a horse was loading into both sides in two different trailers with a second trainer, training was considered complete.

Fancy required additional training procedures for loading. The first one was the addition of a second extension. Fancy was so long that, even with the second extension, she could still touch the target at the end of trailer compartment while keeping her back legs out. Because Fancy was slow to load, a limited hold was instituted. When the limited hold was started, the trailer extensions were removed. The horse was led to the front of the trailer and prompted to get in. If she failed to respond, after 5 s she was prompted again. If the horse still did not respond after 5 s, she was led away from the trailer and a new lead was begun. If Fancy moved any part of her body into the trailer, she was allowed to remain that distance in the trailer for 5 s. If the horse did not move any farther into the trailer, she was again prompted to “touch.” If she did not respond within 5 s, she was prompted to back out of the trailer, and a new lead was begun. The limited hold decreased the number of prompts needed to get the horse to respond but was not sufficient to get her to load. As a third procedure, a companion animal was

loaded first into the right side of the trailer. The limited hold was continued during this procedure.

Design

A multiple baseline design across horses was used. Red had 10 baseline sessions, Penny and Shadow had 13 baseline sessions, and Sammy and Fancy had 16 baseline sessions before they began trailer training. A trailer extension was introduced in Session 22 for Red, Session 25 for Penny and Shadow, Session 28 for Sammy, and Session 30 for Fancy. The extensions were removed at Sessions 27, 28, 28, 32, and 43, respectively. After the horse was loading reliably, generalization probes were conducted for loading on the right side, on alternating sides, in a different trailer, and with a different trainer.

A second trailer extension was added in Session 39 for Fancy. Both extensions were removed and a limited hold was implemented in Session 43. In Session 48, a companion horse was loaded into the right side of the trailer.

RESULTS

Figure 1 shows the results of target training for all horses. All horses learned to touch the target during the first session. Their accuracy began at around 60% and improved to above 80% after the second session, except for Sammy, who took three sessions to reach an accuracy of 90%.

Figure 2 shows Red's approximations to loading, which were representative of all horses. During baseline (A), Red usually approached the trailer to the entrance, occasionally put her head and neck in the trailer, and twice put her front legs in the trailer. During intervention (B), the horse immediately started placing her front legs in the trailer and getting over half her body in the trailer; subsequently, she started putting three legs in the trailer more often. Red oc-

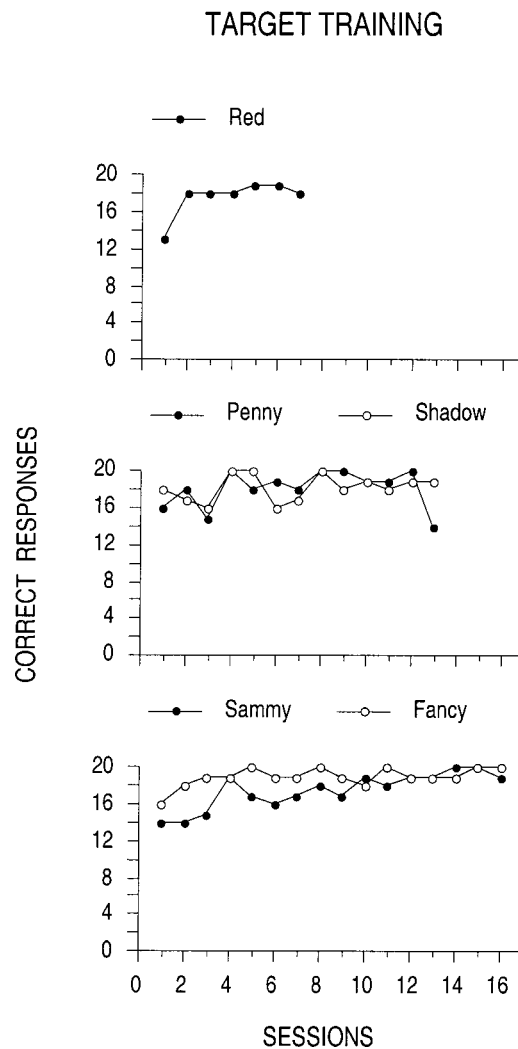


Figure 1. Target training performances by each horse.

asionally placed four legs in the trailer but never stayed longer than 5 s. When the extension was introduced (C), the frequency of putting four legs into the trailer for less than 5 s immediately increased. By the third session after the introduction of the extension, she was consistently loading. When the extension was removed (return to B), the horse continued to load consistently. However, she occasionally did not put four legs in the trailer or did not remain in the trailer for more than 5 s. By the seventh session

RED

A = Baseline B = Targeting Left Loading C = One Extension
 B1 = Targeting Right Loading B2 = Targeting L/R Loading
 B3 = Different Trailer B4 = Different Trainer

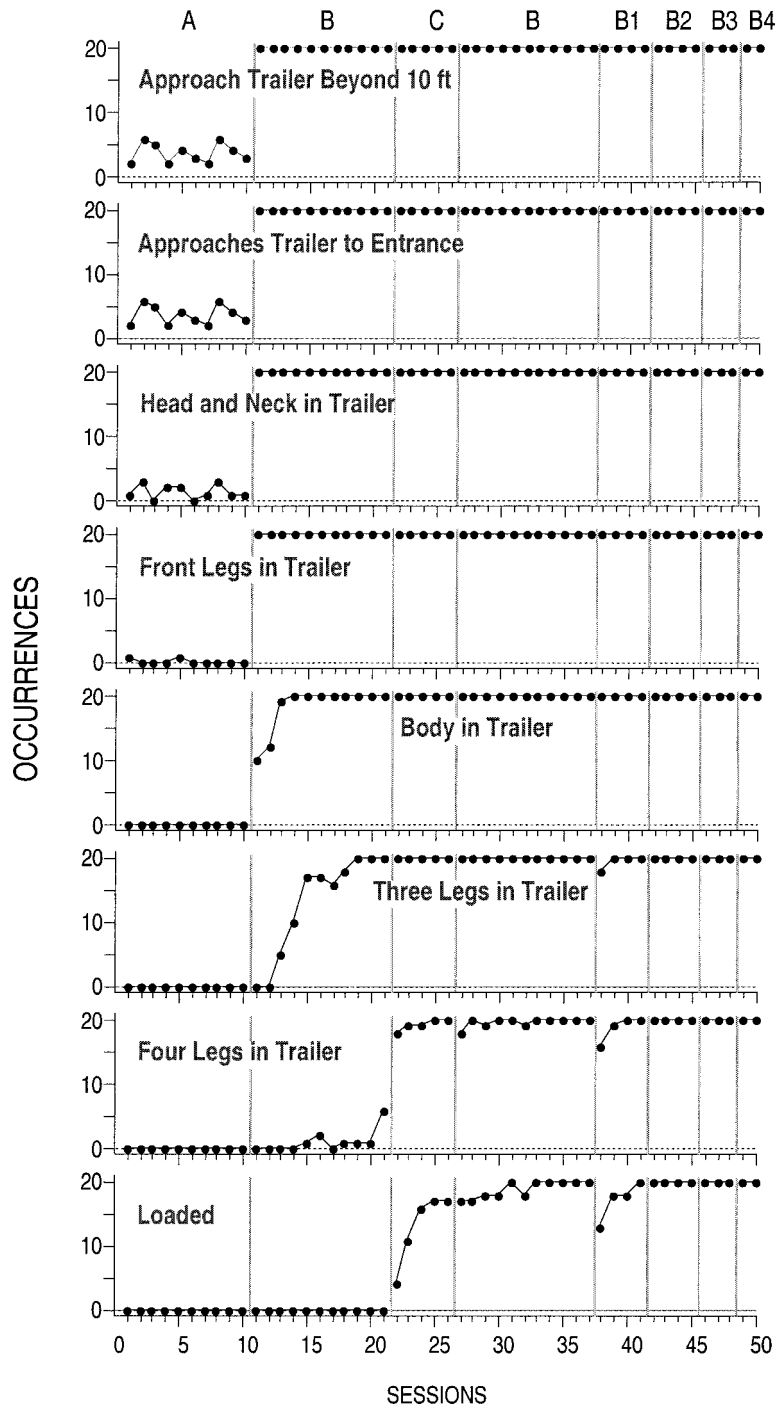


Figure 2. Red's approximations to loading.

after the removal of the extension, the horse was loaded during each of the 20 trials. When the horse was switched to loading in the right side of the trailer (B1), her loading behavior was initially disrupted. She reverted to body in trailer, three legs in trailer, and getting out of the trailer before 5 s during some trials of the first three sessions. The horse continued to be completely loaded when she was switched to loading half of the trials in the right side and half of the trials in the left side (B2), when she was loaded into a different trailer (B3), and when she was switched to a new trainer (B4).

Figure 3 shows all horses' loading approximations during all the experimental conditions. During baseline (A), the horses' performances ranged from Step 1 to Step 4. During target training (B), Red's loading approximations increased to Step 6 with some occurrences of Step 7. Penny and Shadow reliably performed Step 5 with some occurrences of Steps 6 through 8. Sammy's loading approximations increased to Step 3, then Step 4, and later to Step 5 with some occurrences of Steps 6 through 8. Fancy's loading approximations increased to Step 5 with some occurrences of Step 6. When the extension was added (C) all horses reached the criterion performance (except Fancy). These performances continued when the extension was removed (B), and were slightly affected (most noticeable for Red and Penny) during the first session when the horses were loaded on the right side (B1). The horses continued to load more than 90% of the time when they were loaded in both sides (B2), when they were switched to a new trainer (B3), and when they were moved to a new trailer (B4). Fancy's loading approximations were not significantly changed after the addition of the first extension (C), when the second extension was added (C1), or when both the extensions were removed and a limited hold was put into effect (D). However, when a companion horse was put into the other side

of the trailer (E), Fancy immediately reached the criterion performance. Fancy's performances did not deteriorate when the other animal was removed (B). When Fancy was loaded in the right side of the trailer (B1), there was a slight decrease in her loading. Her performance was slightly affected during the first session when she was required to load on both the right and left sides (B2), when she was switched to a new trainer (B3), and when she was moved to a different trailer (B4).

Figure 4 shows the inappropriate behaviors (head tossing, standing, turning, freezing, rearing) exhibited by each horse throughout the study. The 5 horses exhibited varying rates and types of inappropriate behaviors during baseline. The most prevalent behaviors were standing, turning, and head tossing. Sammy was the only horse that exhibited freezing.

All 5 horses showed an immediate decrease in the number of inappropriate behaviors when trailer training began. However, Penny, Shadow, and Fancy had a few occurrences of inappropriate behavior during the early sessions of intervention. During the first session, Penny showed some turning; during the fourth session, she displayed some freezing, turning, and head tossing. After the fourth session, there were no further inappropriate behaviors. Shadow exhibited some head tossing during the fourth session, but there were no other inappropriate behaviors recorded after trailer training began. Fancy showed some head tossing during the second session but no inappropriate behaviors during the remainder of the study.

Figure 5 shows the number of leads and prompts for each horse. During baseline, all horses had a low number of leads with a fairly high number of prompts. When intervention began for Red and Shadow, only one prompt was usually needed for each lead. There were four occasions for both horses in which their prompts were slightly higher

A = Baseline B = Targeting Left Loading C = One Extension C1 = Two Extensions
 D = Limited Hold E = Horse Inside B1 = Targeting Right Loading
 B2 = Targeting L/R Loading B3 = Different Trailer B4 = Different Trainer

■ < 90%
 □ > 90%

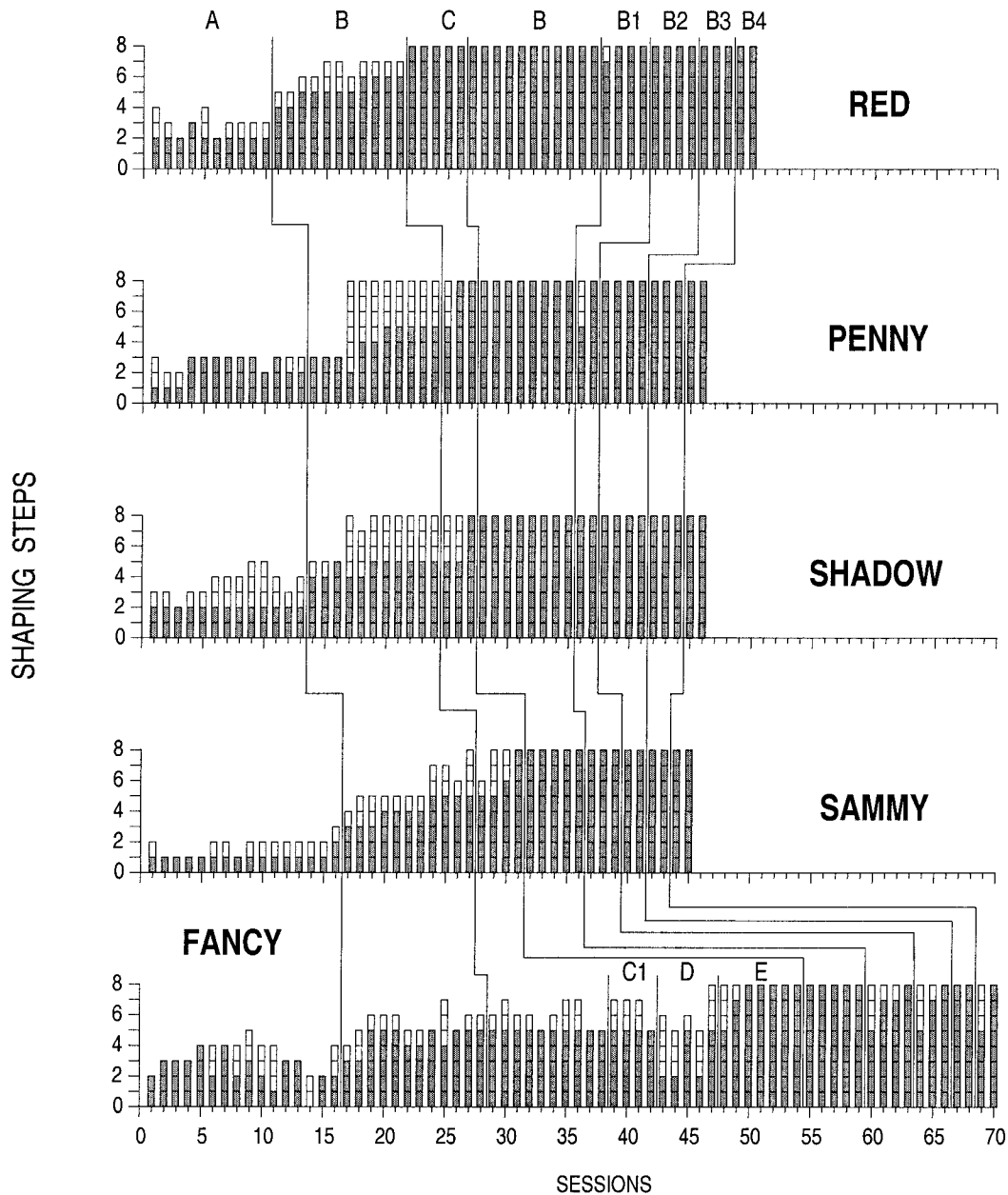


Figure 3. Approximations to loading by each horse. The dark squares signify shaping steps in which the horse performed a particular step at 90% of the time or more; white squares signify that the horse performed a particular step less than 90% of the time.

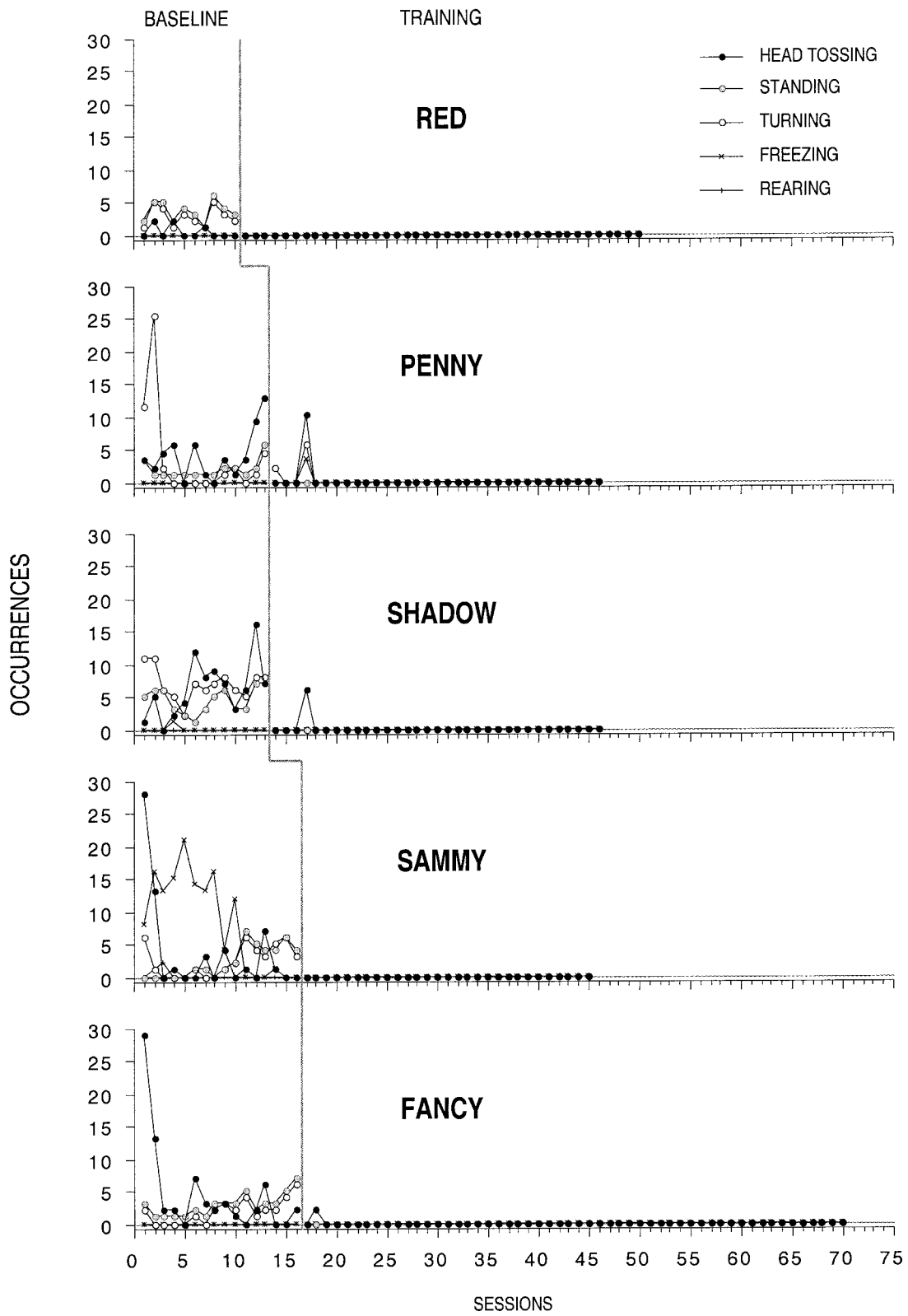


Figure 4. Inappropriate behaviors exhibited by each horse.

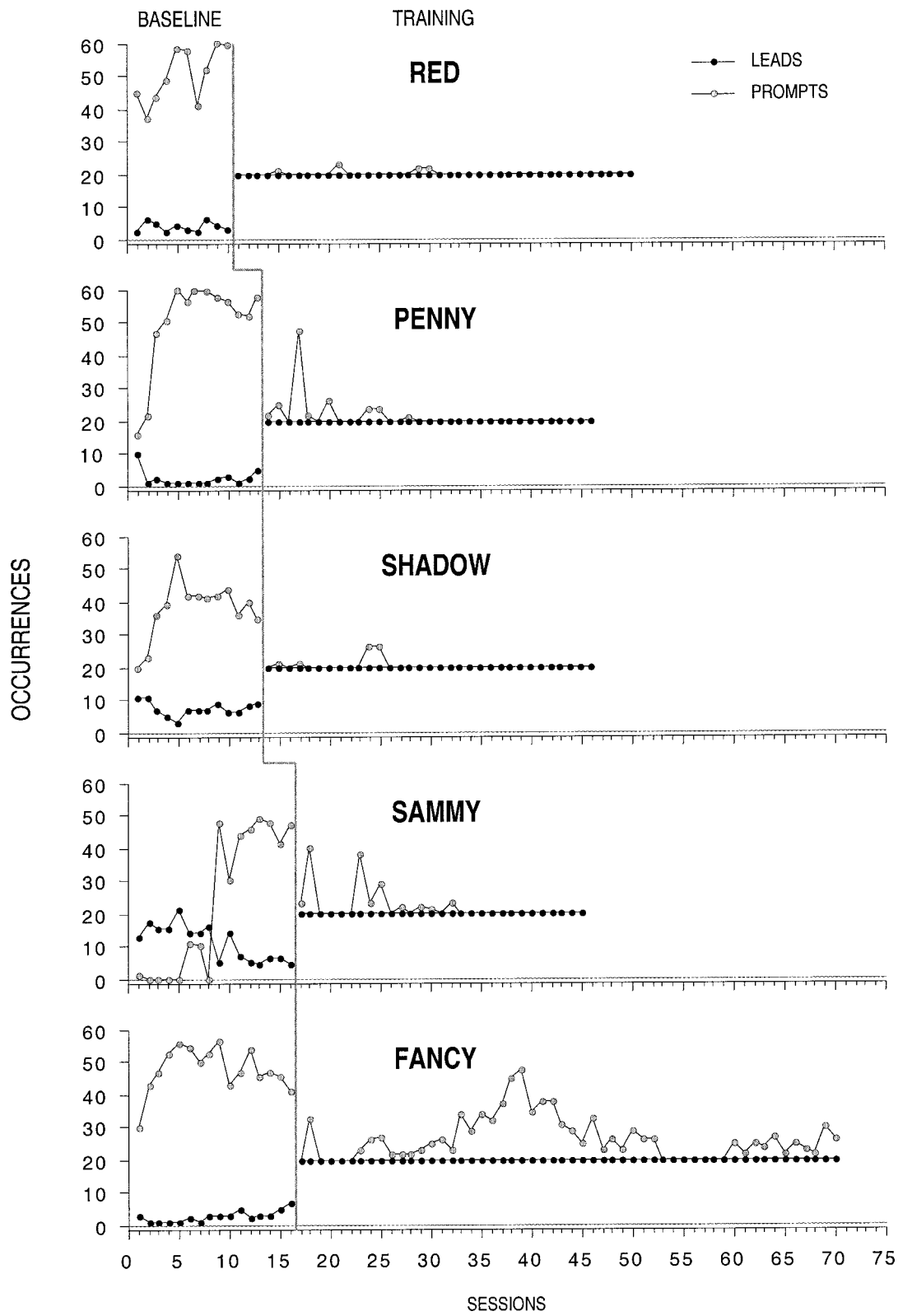


Figure 5. Number of leads and prompts for each horse.

than the number of leads. Penny and Sammy each had a few more sessions in which more prompts than leads were necessary. There was a spike in Penny's number of prompts during the fourth session, which was the session in which there was a corresponding spike in inappropriate behaviors (Figure 4). Fancy showed an increasing number of prompts after Session 32, which decreased after the limited hold was put in place (Session 42). When Fancy was switched to loading into the right side of the trailer, the number of prompts became slightly higher than the leads and remained variable through the remainder of the experimental phases.

There were other changes in the horses' behaviors that were not directly measured but were noticed by the owners. For example, 2 horses (Shadow and Penny) previously ran to the back of the pasture when they saw a halter and lead rope. They also tossed their heads and turned so that it was difficult to put halters on them. When training began, they were much easier to handle and did not avoid the halter. They came up, stood at the fence, and waited to be haltered. They also began to put their heads down so that the halter could be placed easily over their heads.

DISCUSSION

Target training and shaping were effective in training the 5 horses to load into a trailer without the use of punishment or negative reinforcement. The horses' loading generalized to other trailers and to other trainers, including the owner. Although no procedures were implemented to decrease the undesired behaviors that occurred during baseline, they disappeared soon after trailer training began.

The procedures employed here have some noteworthy aspects. First, target training allowed the establishment of stimulus control

over the horses' approach, under conditions that were unlikely to occasion problem behavior. The target was then used as an effective prompt for the horses' approximations to loading. Because approaching the target was followed by positive reinforcement, it made more likely the horses' approach to situations previously avoided. The technique has been successfully used to prompt animal behavior that is unlikely to occur or difficult to shape through successive approximations without prompting (e.g., piano playing, high jumps, heeling, etc.). Common targets include target sticks, colored spots, laser beams, and the trainer's fist. The technique has also been used with humans, but has not been identified as targeting. An ingenious use of targeting was reported by Siegel (1977). He applied the technique to train children with moderate mental retardation to control misdirected urinations by placing a floating target in a commode. Other applications of targeting with humans may include the teaching of walking to a variety of destinations without physical guidance (cf. Pryor, 1999), or the teaching of orienting toward and then retrieving distant objects, to name a few. It is important to note that targeting, like any other prompting technique, may require special techniques to fade the target.

The use of targeting to load horses is new. Horse trainers usually rely on dressage whips as cues for the horse to move in certain directions. To facilitate loading, some trainers recommend teaching "go forward" cues with the use of a dressage whip. However, this might present some problems. First, dressage whips are often associated with aversive situations. It might be necessary to desensitize the horse to the whip and to pair the whip with positive events before trailer training and leading skills can be taught. The target, on the other hand, has no prior negative history. Second, although dressage whips can be used to teach the horse to move forward,

backward, and side to side, the trainer is limited with respect to teaching other behaviors. In contrast, the target is more versatile because it can be placed in any number of locations and thus prompt many of the horse's behaviors without touching the horse or causing avoidance. The target could also be considered a more effective training aid because it is less likely to be used as a means to punish the animal. Whips, on the other hand, are more likely to be used, and commonly are used, to punish the horse. Although the target and the dressage whip could be combined during training, the target alone should be sufficient, as indicated by the present data.

Some professional horse trainers (e.g., Rashid, 1993) say that training a horse to load is an individual process, requiring unique procedures. Although this is a reasonable assumption based on individual differences in reinforcement history, results of this study indicate that 4 of the 5 horses followed a similar shaping program, regardless of the behavior they exhibited during baseline. They progressed from approaching the entrance of the trailer, to putting the head in the trailer, to putting the body in the trailer. This was sufficient for the horse to touch the target placed at the very end of the trailer. The addition of an extension prevented the horses from easily reaching the target and facilitated the final behavior. It must be noted that the addition of the extension was not enough to get Fancy to perform the final behavior. Perhaps this difference can be attributed to a combination of the size of the trailer and the size of the horse.

Fancy required different procedures to get her all the way into the trailer. It was necessary to have another horse loaded in the right side of the trailer for a few sessions. Lyons (1991) recommends this procedure. Perhaps this procedure was helpful because the presence of another horse in the trailer

may have reduced the likelihood of a horse's natural flight response. For Fancy, the addition of another horse greatly facilitated the speed of the shaping program. Another interpretation of this result is that the horse was simply imitating. The facilitation of behavior by conspecific models has been amply documented with animals. Studies have found that there is a high correlation between the topography of an observed response and the performance of that response by another animal (e.g., Akins & Zentall, 1996).

An interesting result of this experiment is that the loading behavior of some horses was disrupted when the loading conditions were slightly changed. Small changes, such as switching from loading into the left side of the trailer to loading into the right side of the trailer, produced minor disruptions in loading behavior for 3 horses (Red, Penny, and Fancy). There was a slight increase in variability in Fancy's loading behavior with each new change in the procedure (i.e., switching sides, new trainer, and new trailer). These disruptions were easily overcome with continued training, but suggest that after training the initial loading response, trainers should test for the generalization of loading to other conditions that may arise during the loading of horses in the natural setting.

The change from horse training based on aversive stimulation to training using positive reinforcement has an obvious and direct benefit to animals. It is also conceivable that this change could have broader social impact by diminishing abusive behavior control with other animals. The present study offers an empirically validated alternative approach, based on positive reinforcement. This approach, in addition to effectively teaching the target behavior, also positively changed other horse-handler relations. For example, undesired behavior immediately disappeared when the target was introduced

during training, and anecdotal reports indicated that the horses' compliance also improved during and outside training. Pryor (1999) has also observed this phenomenon with horses, dolphins, and other species. She reports that "an untamed dolphin, having been shaped with a marker signal, the whistle, and food reinforcers, suddenly became quite docile, allowed itself to be petted, and solicited social attention without any effort by us to 'hand-tame' it or train it to do so" (p. 160). Her observations led her to say, "A curious but important corollary to training by reinforcement is that it breeds affection in both subject and trainer. . . . The success of the training interchange tends to turn the participants into generalized conditioned reinforcers for each other. The trainer is the source of interesting, exciting, rewarding, life-enhancing events for the subject, and the subject's responses are interesting and rewarding for the trainer" (p. 172). Future research should further investigate the details of these important side effects of training with positive reinforcement.

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STUDY QUESTIONS

1. What two factors often contribute to difficulties in trailer loading a horse, and how did the present study address these difficulties?
2. Describe the behaviors for which data were collected.
3. What was the purpose of "target training," and how was it conducted?
4. What features of the trailer-training procedure may have enhanced its generality?
5. What additional procedures were used during Fancy's training?
6. Summarize the overall results obtained.
7. Discuss some general benefits of the training procedure.
8. The authors indicated that "targeting, like any prompting technique, may need special techniques to fade the target." Suggest some strategies for fading the target or transferring control to a more convenient stimulus.

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