

EXHIBIT 7-1 Three Logical Traps That May Confuse Thinking about Race and Sport

Thinking on the subject of race and sport would be improved if thinkers would discipline themselves better and observe what they have been taught about logic and the scientific method. One wonders if some recent commentators on the race and sport issue have been taught much of anything about logic and science. Discussed below are three ideas that could clarify debate on physical type theories of athletic achievement, if commentators would pay attention to them.

Necessary vs. Sufficient Causes

When we think of *cause and effect* we usually think about condition *a*, which, when present, produces or greatly increases the likelihood of effect *b*. "If you train hard you will be a better swimmer" expresses the idea of sufficient causation. Hard training is a *sufficient condition* to produce an effect, improved times in swimming. But what if a coach promises, "If you train hard you will win the city championship"? True, hard training increases an athlete's chances of winning a race, but other swimmers are training hard too. A would-be champion has to improve his or her stroke and, perhaps, have a "good day" in order to win.

The coach would be more logically precise to say, "If you don't train hard you will not win the city championship." This statement implies that hard training is a *necessary condition* of successful competition. Without hard training no championship is possible. With hard training a championship is possible, but not guaranteed. It may take a combination of talent, stroke improvement, peaking, good diet, psychological focusing, and even luck to be *sufficient* to create a victory in a championship event.

Physical ability theorists often imply that physical ability is a *sufficient* condition for the achievement of elite athletic status. Critics of physical ability theories seem to think that hard work or an abundance of playing opportunities are sufficient conditions for the achievement of elite athletic status. In fact these things are *necessary conditions*. Without hard work, without good facilities, without physical ability, without good competition, people cannot become elite athletes. When some of these conditions are met, people have a chance to become elite athletes. Heredity and environment are *both* necessary conditions for athletic success.

A talent-rich population will not produce many champions without favorable social conditions that encourage people to participate. Excellent coaching, facilities, and competition are also required. A population with little talent will not produce many champions even if opportunities to participate are plentiful.

Affirming the Consequent

If it rains the sidewalk will get wet.
The sidewalk is wet.
Therefore, it has just rained.

This statement appears reasonable enough, but it is flawed. Yes, if it rains the sidewalk will get wet, but if I water my lawn carelessly it will get wet too. If the street sweeper gets careless the sidewalk may get wet. Just because the sidewalk is wet does

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not prove that it rained. Assuming that a result (a wet sidewalk) proves that a particular cause has happened is called *affirming the consequent*.

Theorists who observe sharp racial differences in performance often assume that these differences "prove" their particular theory, but other theories might explain the differences instead. The fact that blacks excel in basketball in the United States does not prove that blacks see basketball as a way out of the ghetto, or that blacks have more natural ability, or that black kids imitate the role models of famous basketball players.

"Man on the street" beliefs about why black athletes excel in sprinting, basketball, football, and baseball assume that the black excellence they are explaining "proves" their particular explanation (see, for example, Kane, 1971). Far from it. The physical causes, whatever they may be, of black-white performance differences have to be shown to exist in the two populations in roughly the same proportion as athletic achievement. To complicate matters, the effects of sociological factors like incentives and opportunities to play must also be considered.

Adequate demonstration of any theory that considers some black-white physical or psychological differences as causes of black-white performance differences requires a long, arduous research agenda. Saying "this must be so because it is consistent with known performance differences" proves little about the truth of any particular explanation.

Tautology

Tautology means saying the same thing twice. Saying "The Chinese don't like milk because Chinese culture defines milk as unpalatable" is really saying "the Chinese don't like milk because the Chinese don't like milk." Some theories about physical causes of racial performance differences are tautological. "Blacks are better sprinters because they can run faster" is, of course, tautological.

Should a researcher discover certain morphological differences (say, longer legs and narrower hips in blacks) between racial groups, he or she would be wrong to believe the morphological differences necessarily explain performance differences. All that is being done is substituting two sets of morphological descriptors for the words black and white, saying "people who look like blacks can run faster than people who look like whites." This is no different than "blacks can run faster than whites."

To show that blacks have some anatomical advantage over whites that helps them achieve faster times in sprinting events, two "facts" must be demonstrated. First, there must be black-white physical differences that approximate in magnitude known black-white performance differences. Second, and more importantly, *these same differences must distinguish good sprinters from less able sprinters*. The best Japanese sprinters should have these physical characteristics more than less successful Japanese sprinters. The best white sprinters should have these characteristics more than less able white sprinters. The best black sprinters should have these characteristics more than less able black sprinters.

An adequate physical explanation of black sprinting superiority has to first

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distinguish between good and bad sprinters. It has to show what better Russian sprinters have that slower Russians do not, and what better Arab sprinters have that slower Arabs do not, and so forth. Once an explanation of what physical characteristics distinguish better sprinters within any population is demonstrated, these same characteristics have to be shown to be distributed between races in approximately the same proportion as racial differences in performance. That is, world-class white sprinters should exhibit the same "sprinter profile" that top black sprinters have. Slower white and black athletes should not fit this profile.

TABLE 7-2 Comparisons of Blacks to Whites and Sprinters to Nonsprinters on Ratios between Hip Width, Height, and Leg Length*

	Hip Width/ Height		Hip Width/ Leg Length		Leg Length/ Height	
	Black	White	Black	White	Black	White
Reference	—	.16	—	.35	—	.46
Sprinters	.15	.16	.31	.33	.48	.47
Basketball	.15	.16	.30	.34	.48	.47
Boxers (Welter-Lt. Middleweight)	.15	.17	.31	.36	.47	.46
Long Distance	.15	.16	.32	.34	.47	.46
Middle Distance	.15	.16	.30	.34	.49	.47
Jumpers (HJ, LJ, TJ)	.15	.16	.30	.33	.49	.47
Swimmers	—	.16	—	.34	—	.46

Conclusions:

1. Sprinters have narrower hips (relative to height or to leg length).
 - a. Black sprinters do *not* have narrower hips than black nonsprinters.
 - b. White sprinters do have narrower hips than white nonsprinters.
2. Black nonsprinters have narrower hips than white sprinters.

*Data from de Garay, Levine, & Carter (1974), Tables 3.100, 3.104, 3.106, 3.107, 3.109, 3.113, 3.122.

TABLE 7-3 Relationship between Reaction Time Required and Racial Representation at Various Football Positions*

Position	Reaction Time of Players [†]	Rank	Percent Black in Position [‡]	Rank
Linebacker	.2316	(1)	8	(5)
Quarterback	.2335	(2)	7	(6)
Running Back	.2338	(3)	26	(1)
Defensive Back	.2343	(4)	17	(3)
Offensive Line	.2346	(5)	4	(7)
Defensive Line	.2410	(6)	13	(4)
Receiver	.2517	(7)	22	(2)

$r_s = -.25$

*Adapted from The Influence of External Stimuli and Eye Color on Reactive Motor Behavior by D. M. Landers, G. E. Obermeier, and M. D. Wolf. In R. W. Christina and D. M. Landers, Eds. *Psychology of Motor Behavior and Sport—1976*, Vol. II. 1976. Champaign, IL: Human Kinetics, pp. 94–112. Copyright 1977 by Human Kinetics Publishers, Inc. Reprinted by permission.

[†]Penn State University football players, 1975.

[‡]Penn State University football players, 1971–1974.