

Preparing Riders to S.E.E. Better: MSF Tools for Improving Hazard Perception



Motorcycle Safety Foundation

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Presentation Purpose

- 1. Provide a rationale for hazard perception training.*
- 2. Show how hazard perception training connects with executive functions.*
- 3. Demonstrate how MSF incorporated hazard perception into its programs.*

Defining Key Terms

- Hazard Perception
- S.E.E.
- Executive Functions
- RETS

Defining *Hazard Perception*

The ability to identify potentially dangerous traffic situations. (Crick and McKenna, 1992)

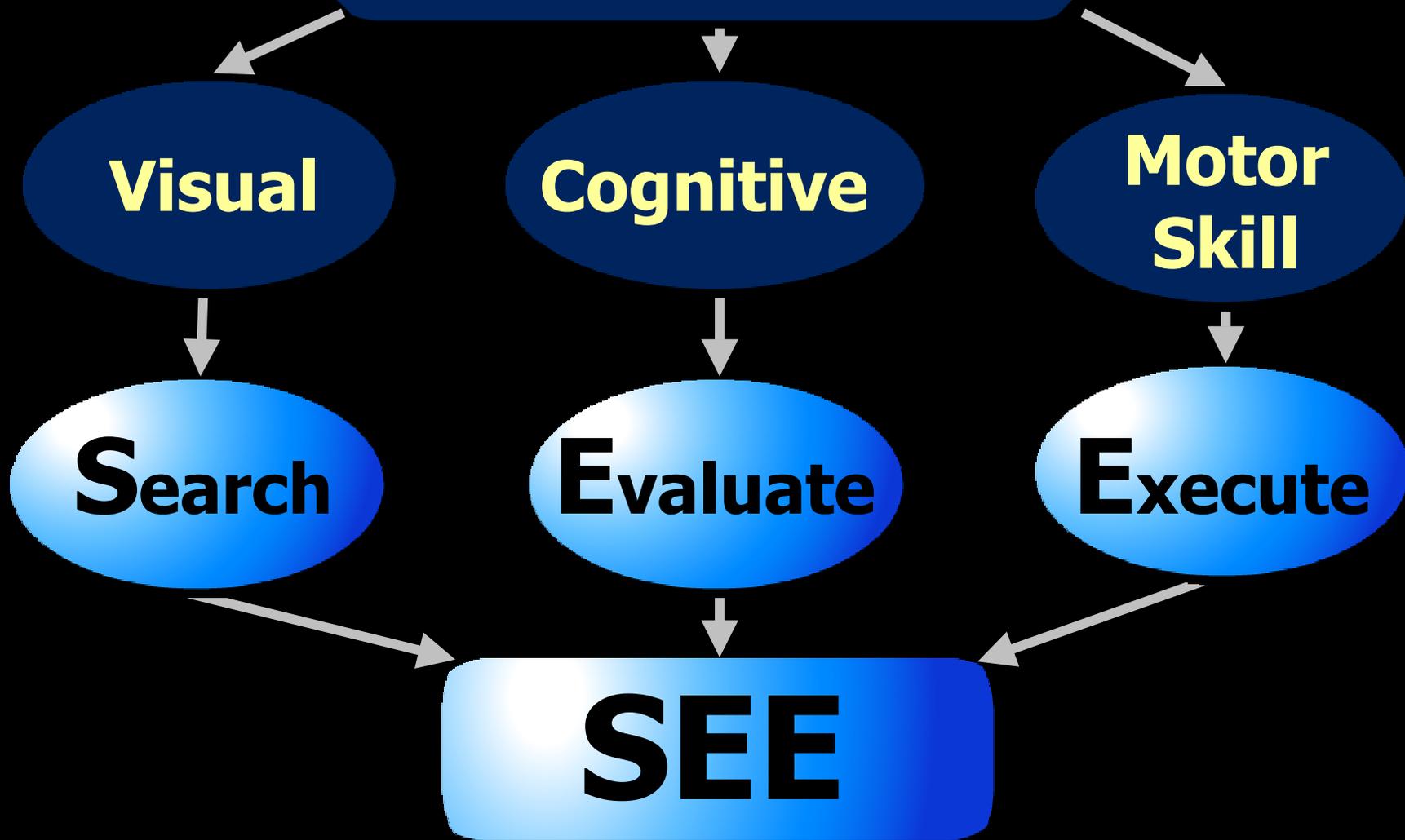
The process whereby a road user notices the presence of a hazard. (McDonald, 2002)

Seeing and understanding accurately. (MSF)

Note MSF expands into *Rider Perception*.

Defining S.E.E.

Rider Functions



Defining *Executive Functions*

Higher-order brain/mind processes:

- Goal Setting
- Planning
- Organizing
- Prioritizing
- Initiating
- Shifting
- Monitoring

Defining *RETS*

Rider Education and Training System
of the Motorcycle Safety Foundation
(MSF)

A System of Safety Programs to Develop
Safe and Responsible Riders

Rationale for Hazard Perception Training

The Human Factors Central Thread of RETS: 5 Core Questions

1. What is the primary cause of rider crashes?
 - Interaction of factors.
2. What is a good rider?
 - One who reduces contributing factors.
3. How does a good rider reduce factors?
 - Applies a strategy—S.E.E. (Search-Evaluate-Execute)
4. How long does it take to reduce risk?
 - It's a decision away!
5. What is the primary challenge to be safe?
 - Choosing to ride within personal and situational limits.

Rationale for Hazard Perception Training

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Rider Perception

Rationale for Hazard Perception Training

The Human Factors Central Thread of RETS: 5 Core Questions

Executive Functions

4. How long does it take to reduce risk?
 - It's a decision away!
5. What is the primary challenge to be safe?
 - Choose to ride within personal and situational limits.

Rider Perception in MSF Programs

Introduced and developed
in basic programs.

Expanded in advanced programs.

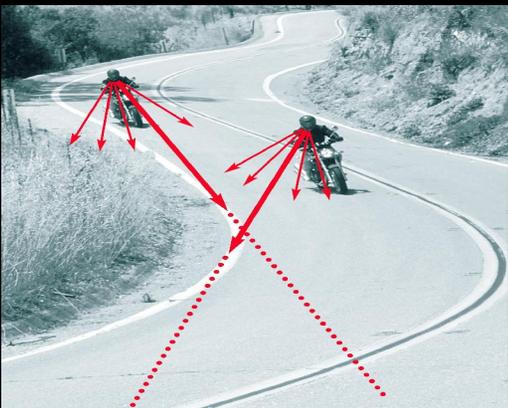
Enhanced at every opportunity.

Rider Perception in MSF Programs

Physical



Mental



Factors other than physical skill contribute to crashes.

Rider Tasks

Social

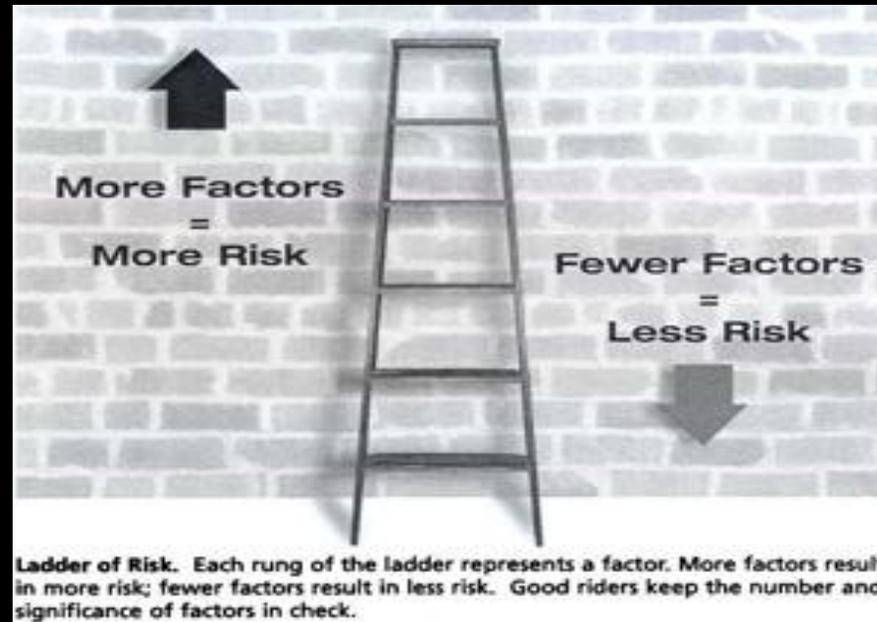


Emotional

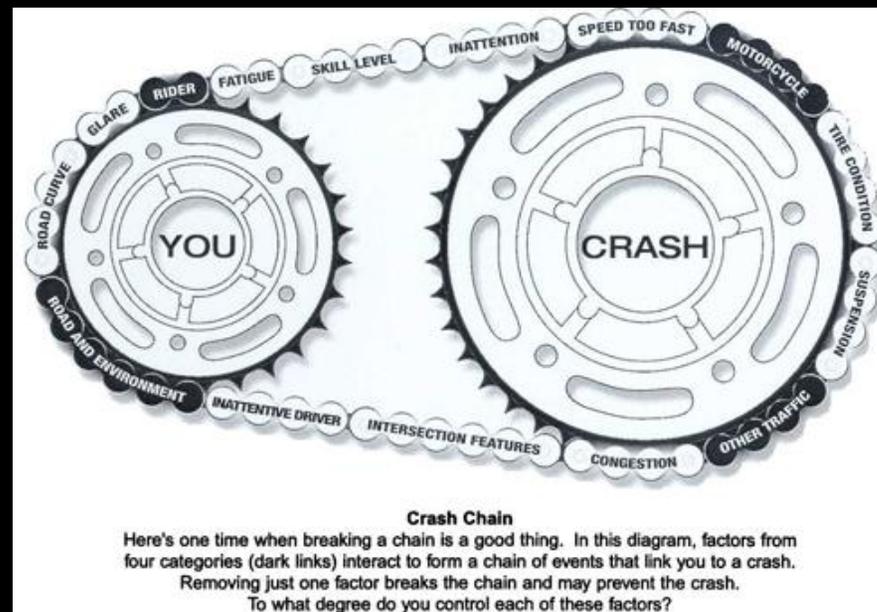


Rider Perception in MSF Programs

Ladder Of Risk

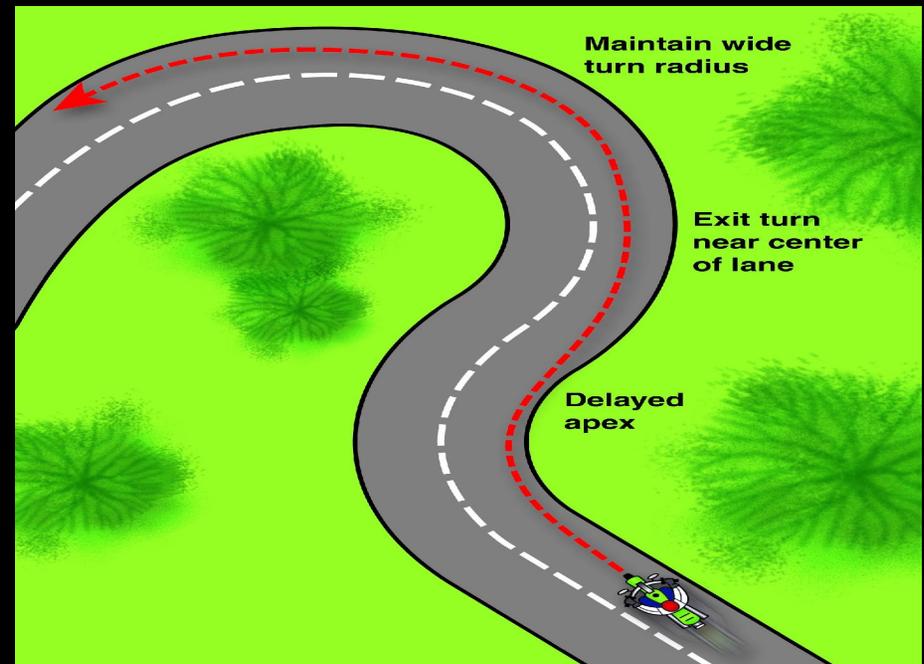
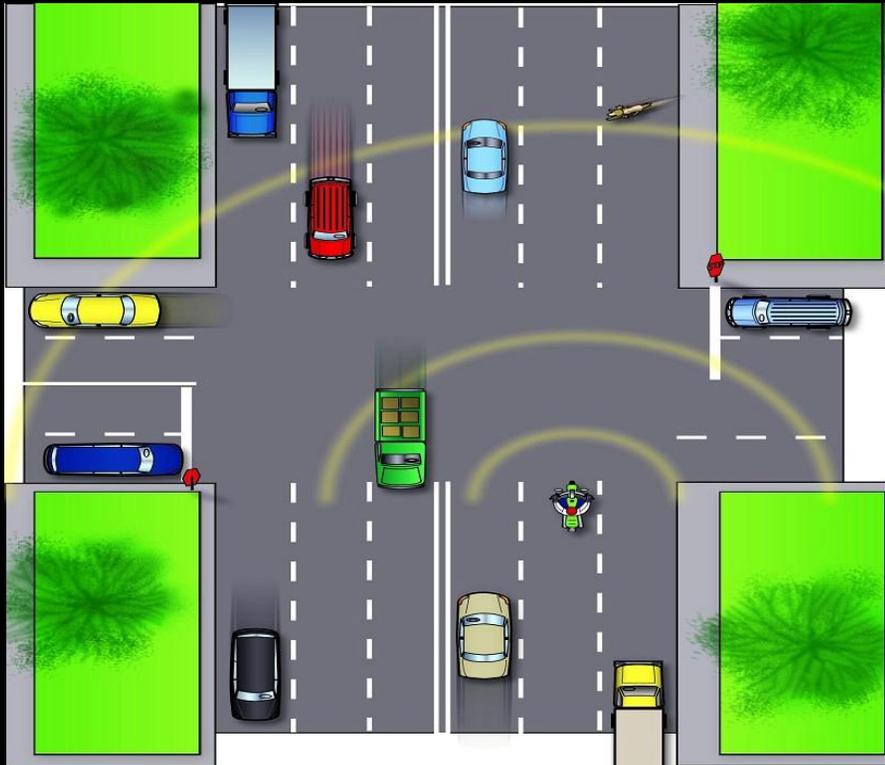


Crash Chain



Rider Perception in MSF Programs

Rider Radar



Rider Perception in MSF Programs

Safety Margins

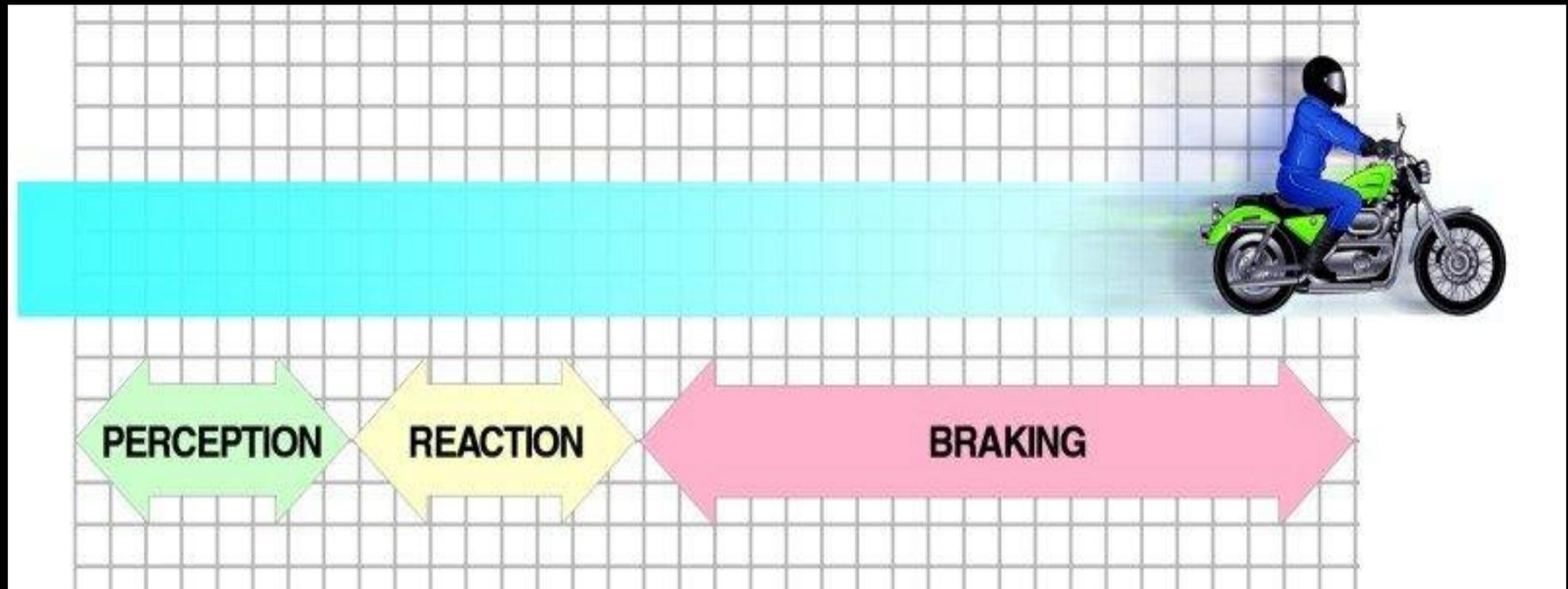
Rider-Motorcycle

Time & Space

Tires-Pavement

Rider Perception in MSF Programs

Total Stopping Distance



SMART



PERCEPTION

RESPOND

MORE TIME & SPACE

RISKY

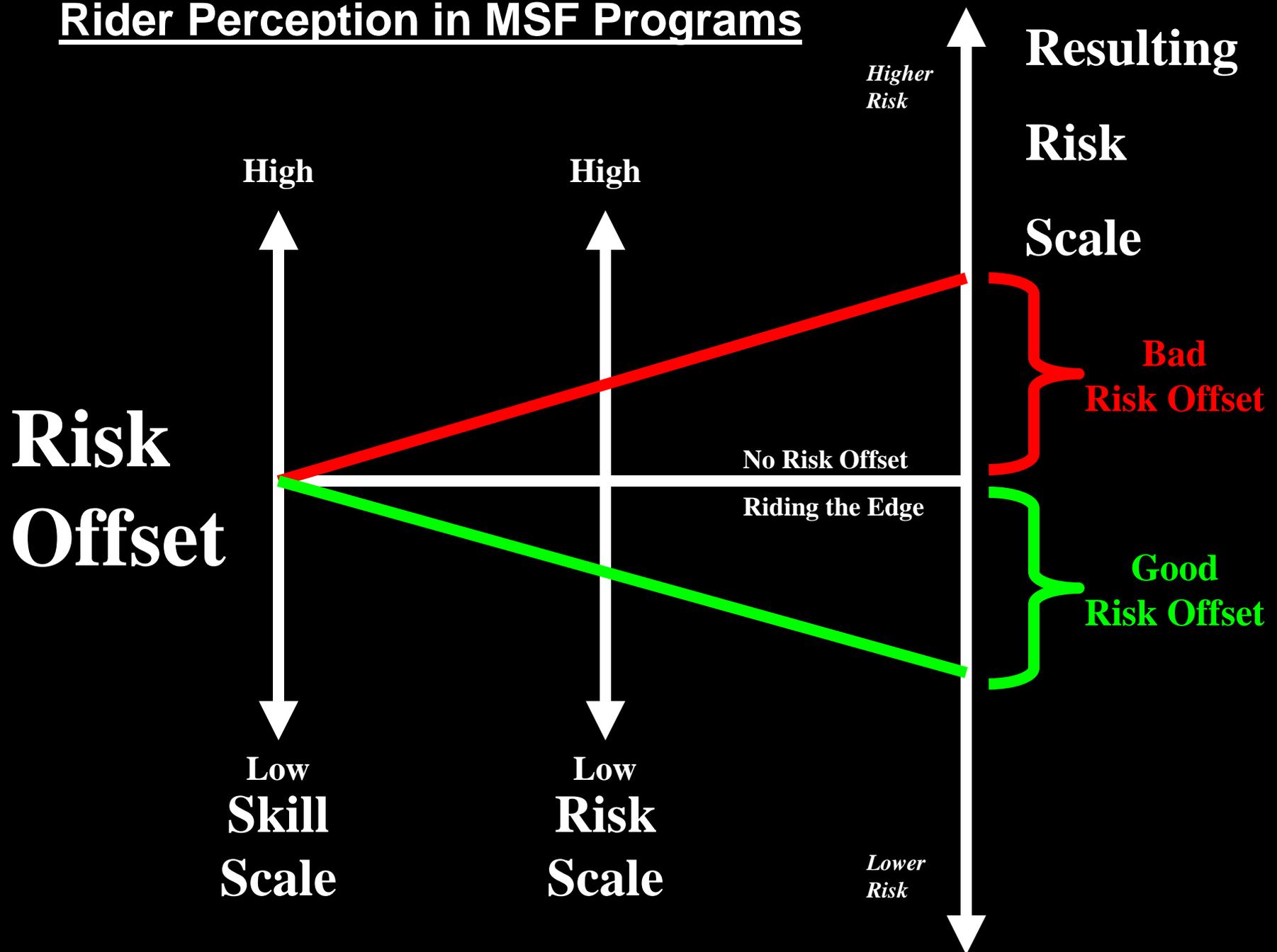


PERCEPTION

REACT

BRAKE OR SWERVE

Rider Perception in MSF Programs



Street Smart – *Rider Perception* (SSRP)

Part 1: Introduction to Perception

Part 2: Improving Perception

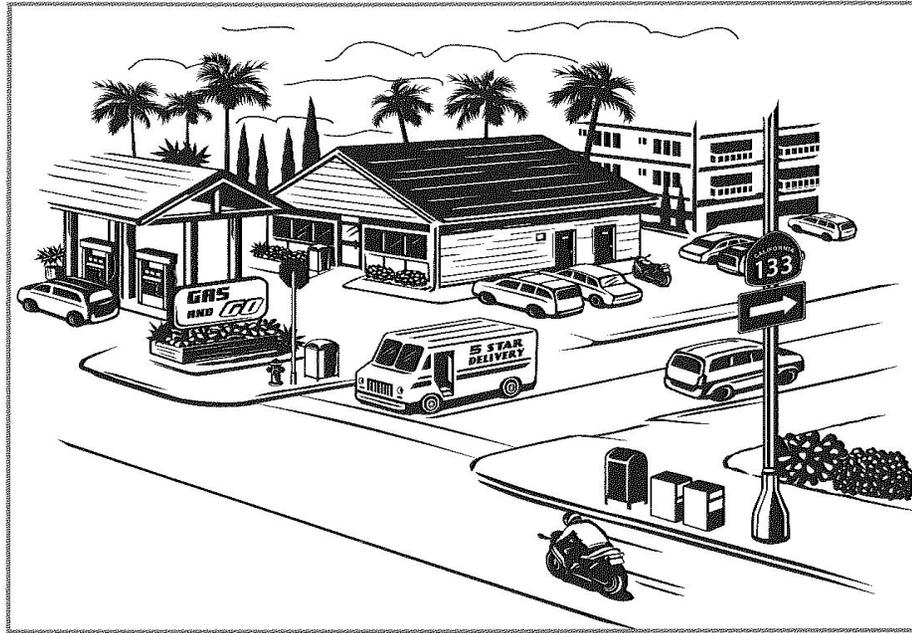
Part 3: Analysis of Collision Traps

Part 4: Road Sign and Collision-Trap Practice

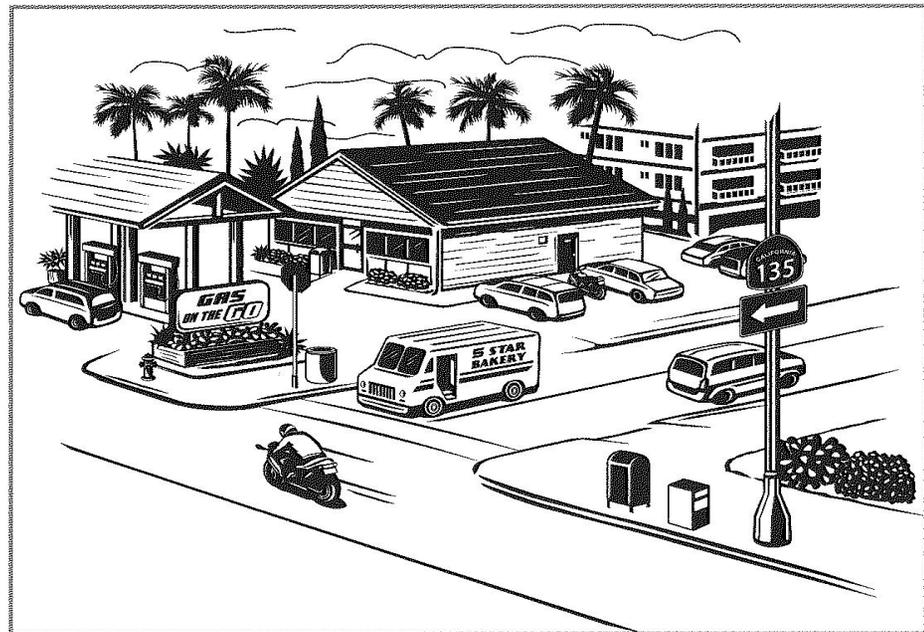
4 Parts to SSRP

Segments from Part 1: Introduction

See the Difference



AT THE GAS STATION — See the 12 differences.



Numbers Sheet in Participant Workbook

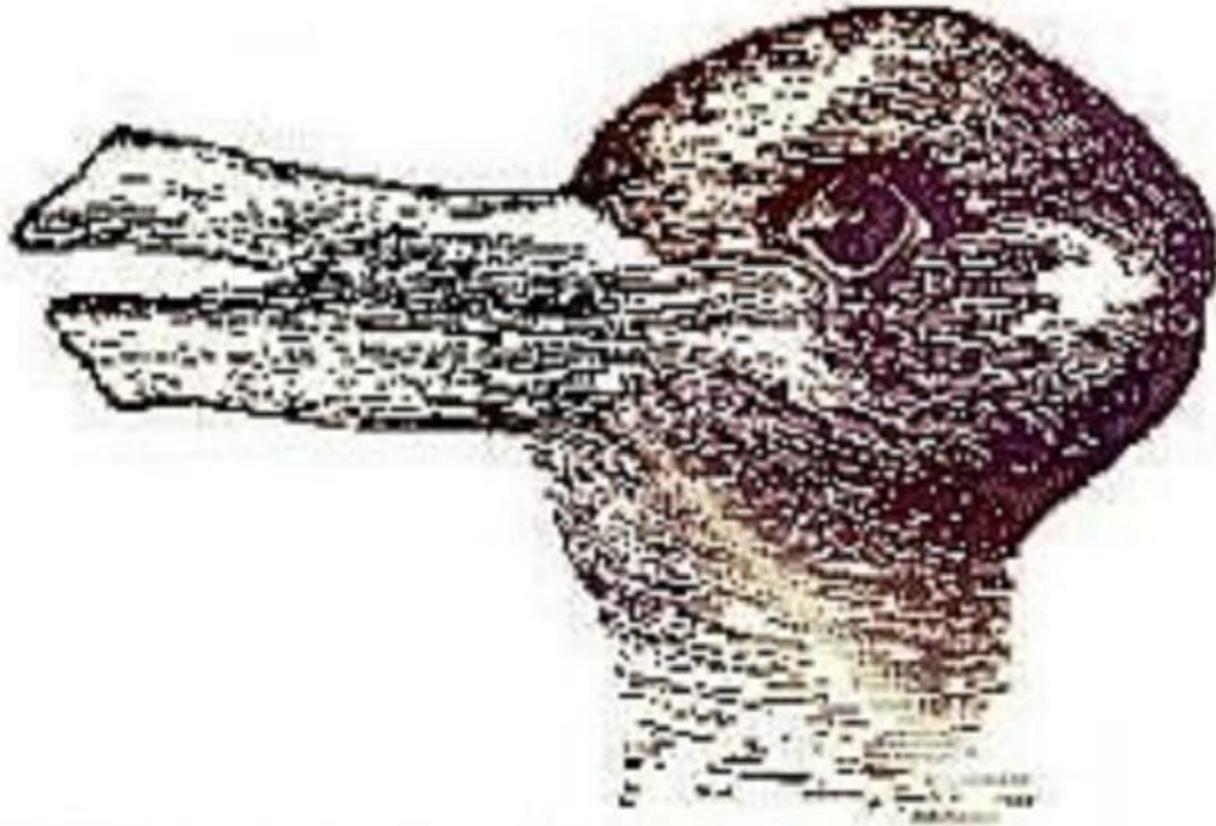
| | | | | | |
|----|----|----|----|----|----|
| 1 | 53 | 39 | 28 | 16 | 54 |
| 27 | 51 | 15 | 2 | 40 | 6 |
| 13 | 17 | 5 | 26 | 50 | 52 |
| 29 | 3 | 41 | 38 | 14 | 30 |
| 37 | 49 | 25 | 18 | 4 | 42 |
| 7 | 23 | 55 | 46 | 36 | 34 |
| 35 | 43 | 31 | 22 | 12 | 10 |
| 77 | 19 | 57 | 44 | 24 | 58 |
| 47 | 33 | 45 | 8 | 32 | 60 |
| 27 | 9 | 59 | 20 | 48 | 56 |

Numbers Sheet in Participant Workbook

| | | | | | |
|----|----|----|----|----|----|
| 1 | 53 | 39 | 28 | 16 | 54 |
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| 29 | 3 | 41 | 38 | 14 | 30 |
| 37 | 49 | 25 | 18 | 4 | 42 |
| 7 | 23 | 55 | 46 | 36 | 34 |
| 35 | 43 | 31 | 22 | 12 | 10 |
| 77 | 19 | 57 | 44 | 24 | 58 |
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Most riders do better in traffic if they:

1. Have a plan or a strategy.
2. Use aggressive vision.
3. Know where to look.
4. Know what to look for.
5. Pay attention to what is important.



What do you see here?



What do you see here?

What do you see when riding?

You are on your motorcycle
traveling down a U.S. roadway
and observe this...



The trap here is:

- a. A pedestrian in the crosswalk.
- b. The van is blocking your view.
- c. Oncoming car is poised to turn left in front of you.



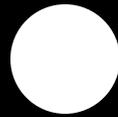
Negotiating this curve has increased risk because:

- a. There is a downhill grade.
- b. The guardrail blocks escape to the right.
- c. Debris on the road surface.

4 Parts to SSRP

Segments from Part 2: Improving Perception

Our central vision is a 3-degree cone.



Our peripheral vision
(with vision in both eyes)
is above 180 degrees.



Using Peripheral Vision.



Mat actual size 35 x 25"

VISION CHALLENGE!



5 sets of 4 numbers

2 4 8 3

5 2 1 8

5 sets of 5 numbers

8 3 6 7 2

6 5 8 2 0

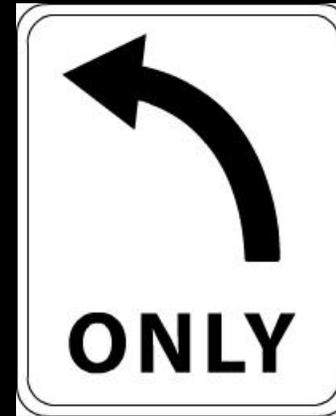
5 sets of 6 numbers

8 4 7 2 1 9

5 7 6 9 2 8

Sign Perception

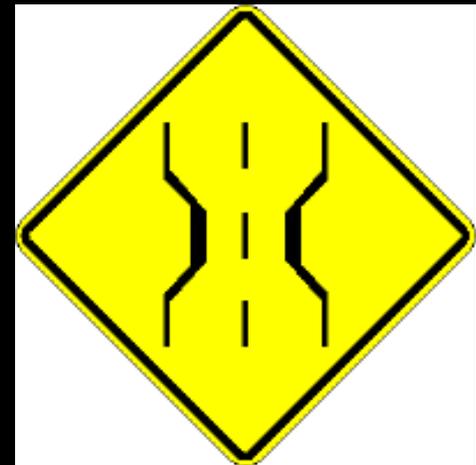
Single Sign





2 Signs





4 Parts to SSRP

Segment from Part 3: Analysis of Collision Traps

(To Search & Evaluate)

You are on your motorcycle and
traveling down a U.S. roadway
and observe this...







4 Parts to SSRP

Segments from Part 4: Practice

RIDER PERCEPTION

Improve your visual perception to be safer on the road. Choose either Road Sign Tests or Collision Traps Tests. The Road Sign Tests help you identify common road signs. The Collision Traps Tests help you evaluate riding situations. Both types of tests demonstrate how quickly your eyes and mind work together if you are attentive.

Each test has 10 questions and each test will be different. Keep trying until you consistently earn a perfect score of 20 out of 20 points. For more information, view Perception Facts and Sign Glossary.

Road Sign Tests →

Collision Traps Tests →

3 Sets of 10

7 sets of 10

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Road Sign Tests →

Collision Traps Tests →

3 Sets of 10

7 sets of 10

Flash speed of road signs: 0.1, 0.3, 0.5 seconds

Flash speed of collision traps: 3.0, 4.0, 5.0 seconds

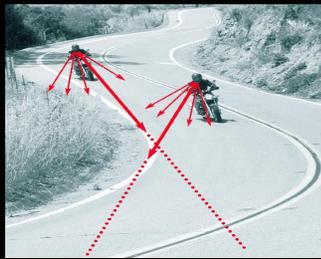
MSF Website: www.msf-usa.org

The screenshot shows the MSF Motorcycle Safety Foundation website. At the top left is the MSF logo. To the right are links for 'NEWS' (Naturalistic Study of Motorcyclists, The New MSF CORE Curriculum) and 'MSF Update' (Washington DC 9-31-10). A navigation bar contains links for RiderCourse Info, Library / Safety Tips, Host An Event, MSF News, MSF Products, RiderCoach Info, Training Site Support, State Laws and Reports, Donate to NMSF, and Contact/FAQ. A search bar is on the right. Below the navigation bar is a link for 'Version Espanola Aqui!'. The main content area features a map of the United States with 'Armed Forces Locations' marked. Below the map is the heading '3 Ways to Find the RiderCourseSM Nearest You:' followed by three bullet points: 'Click on your state above', 'Call (800) 446-9227', and 'Select from the list below'. A 'Find a RiderCourse' button is present. Below this is a large number '5,571,445' and text stating 'Students have graduated from MSF RiderCourses since 1974. 400,000 motorcyclists enroll in our courses each year.' A 'Key Messages' section lists five points: 1. Get trained and licensed; 2. Wear protective gear -- all the gear, all the time -- including a helmet manufactured to the standards set by the DOT; 3. Ride unimpaired by alcohol or other drugs; 4. Ride within your own skill limits; 5. Be a lifelong learner by taking refresher rider courses. Below this is a 'Free Safety Tips for Car Drivers & Motorcyclists' button. At the bottom left is a link 'Ian Ziering Talks About Motorcycle Safety:'. On the right side, there are five video thumbnails with titles: 'Welcome to the Ride' (5 min), 'Basic RiderCourse Highlights' (5 min), 'Group Riding' (10 min), and 'Common Road' (3 min). Each thumbnail has 'Hi-Res' and 'Lo-Res' links. Below these is a note: 'Left-click to play; right-click to download. You may use the above video clips for your own projects.' A red circle highlights a 'RIDER PERCEPTION CHALLENGE!' banner with the text 'Test the limits of your perceptual abilities.' and a 'Click Here' button with a right arrow. At the bottom right is a 'NEW MSF COURSE' button for 'Take a hands on, half-day training class for entry-level solo riders offered by the Motorcycle Safety Foundation®' with a 'Visit Website >>' link.

Hazard Perception and Executive Functions



Physical



Mental



Social



Emotional

- Goal Setting
- Planning
- Organizing
- Prioritizing
- Initiating
- Shifting
- Monitoring

Developing value for hazard perception.

Executive functions regulate a person's goal oriented behavior. It contextualizes intended actions in light of past knowledge and experience, current situation cues, expectations of the future, and personally relevant values and purposes.

EXECUTIVE FUNCTION IN EDUCATION

From Theory to Practice

edited by
LYNN MELTZER

**Motorcycle
Safety
Foundation**

**RETS
Safety
Pyramid**

**Self
Control**

**Self
Assessment**

**Safety
Renewal**

Courtesy

Cooperation

Conspicuity

Protective Gear

Cornering

Braking

Swerving

Strategy

Perception

Judgment

**Clutch/Throttle
Control**

**Straight-line
Riding**

Braking

Turning

Shifting

Knowledge

Skills

Attitude

Habits

Values

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Initiate
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**Safety
Renewal**

**Consciously
Supervise
the
Mind**

Strategy

Judgment

**Clutch/Throttle
Control**

**Straight-line
Riding**

Braking

Turning

Shifting

Knowledge

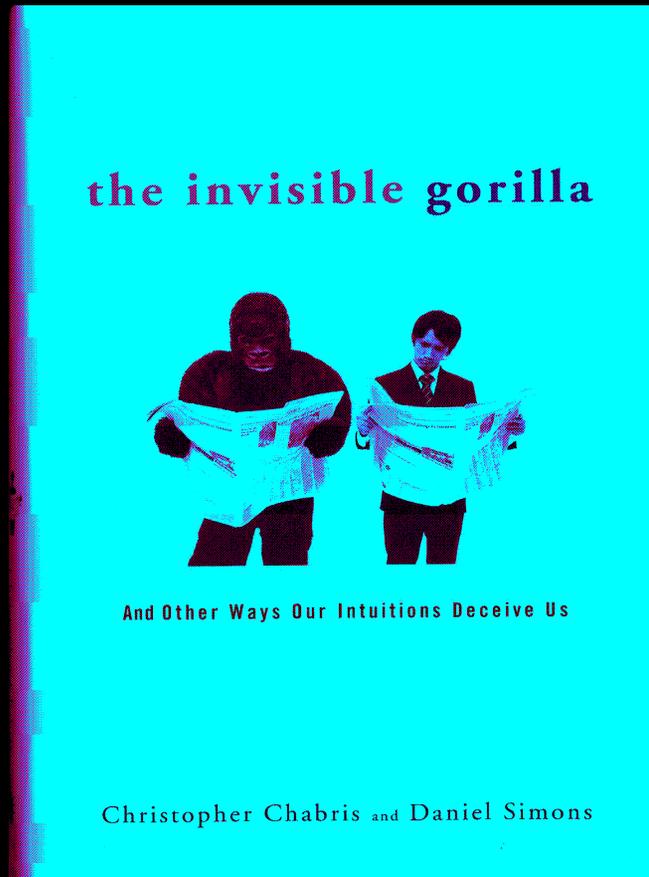
Skills

Attitude

Habits

Values

...becoming aware of the illusion of attention can help us to take steps to avoid missing what we need to see.



Understanding everyday illusions will lead you to recalibrate the way you approach your life to account for the limitations—and the true strengths—of your mind.

Thank You



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