CARS Lessons

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CARS Lesson 1 — Introduction

It's easy to neglect the CARS section in MCAT preparation. Some students take CARS for granted. Others feel intimidated by CARS, and this becomes a pattern of avoidance. No matter how you feel about CARS, it's crucial to begin early. To achieve your potential, start early and put in a few hours each week from the beginning to the end of MCAT preparation. Even if you have always done well on verbal reasoning exams, a sustained effort will make you more secure in achieving a good score on this challenging, competitive section.

Strengthening your reading skill takes time. There is an art to reading an essay closely. While you are reading a passage, you can already be answering the questions intuitively that the exam will ask you later. What does the author hope to accomplish? What devices does the author employ? What claims are made in their argument? Are the claims logically grounded or justified by evidence? What issues does the argument raise? What appeals does it make? Are the appeals emotional, normative or based on authority? What issues does the argument ignore or evade? How is it organized? How does the writer's style serve their argument? The art of close, critical reading is important for doctors. It's a learned behavior, which is why AAMC has this section, so that you can get better at it.

The Test

The author of the passage is not the only author. There is also the test-writer. Unlike the author of passage, the author of the test questions isn't working to communicate. They have a different agenda. Their goal is misdirection and sleight-of-hand. To understand their intentions and methods better, we will make ourselves apprentices in test-writing. What are the different types of questions you see? How are the answer choices designed? How is the 'best' answer created? What goes into the 'second best' answer?

The CARS section is a kind of performance. You need a core method you can count on for this performance. Let's learn how to clear passages and predict the questions before we reach them. We will learn how to pace ourselves and how to keep our cool when the exam is being difficult.

The Lessons

We check in with strategy, task management, and practice assignments in each lesson. Some lessons focus on aspects of reading comprehension or rhetorical analysis. Other lessons focus on test-taking methods.

- Let's get started
- Reader response
- CARS 101
- Pacing yourself
- Blind review

What's an argument?
Types of CARS passages
Types of CARS questions
The test writer's perspective
The main idea
Implied premises and warrants
Focus and flow

AAMC CARS Resources

After the introduction of Diagnostic Tool at AAMC, we believe there are finally enough real AAMC passages to supply a complete preparation. If you are retaking the MCAT, however, you are likely to need to supplement with some 3rd party materials for extra practice (some are very good; see below). Your genuine AAMC passages are precious. You want to be deliberate in how you make use of these. This is how we make use of them in this course.

MCAT Official Prep CARS Diagnostic Tool

The Diagnostic Tool includes approximately three CARS sections worth of passages (172 questions) along with a variety of learning-management and instructional tools. The passages in the Diagnostic Tool are of a more recent vintage than those in the Question Packs - It's easy to make too much of this difference, however. The Question Packs are very good!

We include Diagnostic Tool Step 1 as an assignment spread out over lessons 2 and 3 of this course. The remainder of the Diagnostic Tool consists of practice passages and tools to analyze your performance. We will hold these resources in reserve until later lessons when we can fully benefit during the lead up to full length practice. We will make use of CARS Question Pack Volumes 1 & 2 for passage practice during our earlier lessons.

CARS Question Packs Volumes 1 & 2

The new MCAT was introduced in 2015. For the launch of the Prep Hub, AAMC assembled the science and CARS Question Packs from passages that had been created for the previous MCAT, the "old MCAT". This is an especially meaningful distinction in the science Question Packs, because the personality of the MCAT really did fundamentally change in the sciences between the two exams. The passages in the physics, chemistry, and biology question packs are great practice resources, but they aren't new MCAT passages. The CARS Question Packs are different, however. The old Verbal Reasoning and the new CARS are almost identical.

The old Verbal Reasoning section would occasionally include a passage from a scientific domain such as geology, but these passages did not make it through the filter into the question packs. The change in question to passage ratio is more meaningful. You will find a more variable question to passage ratio in the question packs than in full length MCATs. You won't see a passage with seven questions on the new MCAT, although you will occasionally run into this in

the question packs. This does affect per-passage timing. However, this distinction is not even close to being enough of a reason to choose a 3rd party passage over a question pack passage for practice. The question packs are from the same shop! The test-writing intention is the same. The figure of merit for a test-taker is the same. Aside from a slightly different feel in the pacing, they are exactly the same. In this course, we divide the passages of the question packs into six assignments which appear in lessons 1, 3, 4, 5, 7 & 8.

Official Guide Practice Questions, the Sample Test & Practice Exams 1-4

We will not begin working with full length MCATs until the second half of the course. Full length practice at the start of MCAT review is counter-productive. Although many test-prep companies do have their students take a full-length or half exam at the start, our strong opinion is that it creates a false perception of the exam, damaging self-efficacy. It imposes a gestalt on the science portions, especially, that can be difficult to overcome later. However, after a good amount of content review, a person is able to see the exam for what it is. You know what's in scope and out of scope in a passage, and you understand the intentions of the test-writers much better. At that point, most of physics, chemistry, and organic content review have been completed, and biochemistry and molecular biology are well primed. The exam is much more transparent.

With regard to CARS, by the time we begin full length practice, we will have completed the equivalent of approximately seven CARS sections worth of passages in the Diagnostic Tool and the Question Packs. When you take your first full-length, you will have a complete game to bring to the CARS section.

3rd Party CARS Passages

If you are retaking the MCAT, you will likely already have seen many of the CARS passages at Prep Hub. Even if you are taking the MCAT for the first - and hopefully last - time, a supply of extra passages can be useful for extra practice and for practice with pacing, especially. In other words, you might need more passages than those available at Prep Hub. Well-constructed CARS passages are available for free at Jack Westin and come with the reasonably priced membership options available at Testing Solution. In our opinion, the teams at both of these sites are very thoughtful passage-selectors and question-writers. However, neither site has the resources or the exact personality of AAMC's shop. Every passage at AAMC was created by the same people who make the exam. Every passage has been through a process of validation in real test conditions. You can't excuse yourself after missing an AAMC question by saying, "AAMC wouldn't ask it that way". They just did! After missing a question at Jack Westin or Testing Solution, on the other hand, you won't be able to keep from doing this sometimes, and sometimes you will be correct.

We can't provide a review of the full service options available at either site. Nevertheless, we admire the work in constructing CARS passages of both Jack Westin and Testing Solution very much, and we have received good reports from students about the quality of teaching at both

sites. Their advice may not always agree with our advice, but they are obviously thoughtful and well-informed. We definitely recommend either site as a resource for extra CARS passages. Nevertheless, don't ever take the results from a single session of 3rd party CARS practice as diagnostic. Don't ever them get you down. We have seen a student miss four questions in a single passage at Jack Westin who earlier that week only missed four in an entire CARS section at AAMC. You can learn a lot about CARS at both sites. They are especially useful for per-passage pacing work where you don't want to burn up AAMC passages.

Welcome to the Course! Here's an Assignment!

There is an immersion mindset, and there is an analytical mindset. The analytical mind should arise as a mode of reflection from the flow of reading in an intuitive way, not something imposed from outside. If CARS is taken as a kind of puzzle-solving exercise full of test-prep tips and techniques, you can lose the voice of the writer. You can lose the real communication and sense of exploration in the passage. Before we start turning CARS into a more self-aware performance in upcoming lessons, establish a foundation in your natural reading style. If your primary and secondary school educations were at all typical, you have been taking reading comprehension tests your whole life, since elementary school. You know the drill. Read the passage. Answer the multiple choice questions. Move on to the next passage. Let's do this. The main assignment for CARS Lesson 1 is to visit Prep Hub at AAMC and complete the first 5 passages (35 questions) from Critical Analysis and Reasoning Skills Question Pack, Vol. 1 This is a shorter than a regular CARS section. On a full-length MCAT, the CARS section has 9 passages with 53 questions with 90 minutes to complete. Let's give ourselves 60 minutes to complete the first 35 questions of Question Pack, Vol. 1, a pace that is a bit more lenient than exam pace. Toggle 'Review Answer' to the 'OFF' position. It's almost always better to be in the testing zone with AAMC passages and save careful question review for afterwards. Have fun! Focus on enjoyment, flow, and immersion. This is the foundation to build from.

CARS Lesson 2 — Reader Response Fundamentals

Every CARS passage was written by a living, breathing person. The author didn't set out to make a puzzle. They are trying to communicate. Suppose the passage was written for you. Imagine the passage has arrived like a message in a bottle. Naturally, you are going to give the reading full focus and attention, and you will hear the author's voice in the writing.

Too many people read CARS passages as if they were deciphering a code, like watching strangers interact through a periscope, and they miss the author's voice. Try to picture the writer. Maybe she is new to the university faculty, wearing glasses and sensible shoes. Maybe it's a kind, old bookish man with a bow tie. Imagine they are your friend and have asked for constructive criticism. Listen to what they are saying, not only the plain meaning, but also the expressive dimension. Why did they write the essay? What appeals are they making? What do they think?

Communication is the essence. How you respond is important. It's the other half of the equation. You close the circle. What do you think? Find the real person in the writing and you will naturally comprehend and respond to it. You are hard-wired for communication. When you hear the author's voice, the subtleties become intuitive. Dimensions of meaning become more accessible if you approach reading on a human level rather than trying to decode passages as if they were puzzles.

No matter who it is, never put the author on Mount Olympus. They are a person. Imagine the author is right there with you, trying to communicate. If you get confused about something in a passage, ask them, 'What are you trying to say here?' Maybe you stumbled in the reading. Maybe they stumbled in the writing. Imagine how they respond to your question and often it will come clear.
Good reads

It's beneficial to have a space in this process to build your skill in focused, engaged immersion in reading without the distractors of the CARS format itself, just you and the work. Skill in reading depends on an array of cognitive abilities, and these abilities get stronger with practice. The components of attention influence every dimension of reading. You can make your focused attention stronger. You can build a meta-awareness that allows distribution of attention between trains of thought. Reading closely is a process of regulating thoughts and responses in an effortful goal-directed mode. Practice! You will catch up with the English majors.

It helps to have supplemental reading material that is intrinsically very interesting, so we have curated a collection of essays for you to enjoy. These were chosen because their style, subject, and range of difficulty are similar to what you may encounter in the exam. Many of these essays are famous. This reading list is not a collection of assignments. It's not definitive in any way. This collection of essays gives you a change of pace in MCAT review, a way to take a break which is still productive.

Tallying the incorrects

In the previous lesson, we performed the first five passages (35 questions) from the Critical Analysis and Reasoning Skills Question Pack, Vol. 1 at AAMC - the remainder of this particular question pack is assigned in lessons 3 and 4. In addition to your regular review, let's perform a simple check. Make two columns for the questions you missed. In one column, write down the letter of the answer you chose. In the second column, write down the letter for the correct answer. For some of these, the answer you chose will be a letter before the correct answer in answer choices. For the rest, the answer you chose will follow the correct answer. For example, you might have chosen 'B' for a particular question, but the correct answer turns out to be 'D', so the answer you chose is prior to the correct answer. Count up how many you answered with the wrong answer prior to the correct answer and vice versa.

Suppose you missed 12 questions in the exercise. Maybe you found that for 8 or 9 of those, the correct answer followed the answer you chose in the list of answer choices. Sometimes it's 50:50, but in our experience, especially at the start of preparation, the strong tendency is to have a greater number of incorrect answers where the wrong answer chosen is before the correct answer than vice versa. We have only seen the reverse a couple of times in all of our experience.

This pattern reflects the common human tendency to rely too heavily on the first piece of information offered when making decisions. Psychologists call this 'anchoring'. It happens with the most subtle questions in all sections of the exam, but especially in CARS. This is the CARS test-writer's power of suggestion. No matter how tempting the first decent answer sounds, practice withholding judgment and process all the answer choices before you commit. Give them all equal weight at first. Often it will be clear, and you quickly get to the answer and move on. However, with a subtle, difficult question, be satisfied to get down to the two best at first. Don't make the first decent sounding answer the 'king of the hill'. This may put the correct one in the position of having to fight an uphill battle. Get down to two answers, and then attack them both. One will have a weakness in its armor that you can find. Choose the least worst of the two. That's the one to choose.

MCAT Official Prep CARS Diagnostic Tool

An assignment this lesson is to complete Step 1 of the MCAT Official Prep CARS Diagnostic Tool. Step 1 is comprised of two passages (10 questions) as well as a set of introductory and educational resources for CARS. The entire Diagnostic Tool includes approximately three CARS sections worth of passages (172 questions). We will hold the remaining practice passages in the Diagnostic Tool in reserve until later lessons during the lead up to full length practice. For passage practice during our earlier lessons, we will continue to make use of CARS Question Pack Volumes 1 & 2.

CARS Lesson 3 — CARS 101 Basic approach

Below are some suggested strategies to help you stay on an even keel throughout the CARS section. If CARS is a very difficult section for you, these ideas and methods will help you establish basic efficacy and keep you out of trouble. If you are already very strong, internalizing these ideas will help make your best performances more reproducible. Many of the points will be discussed in greater detail in later lessons.
Starting the passage

Find your bearings

You usually have some kind of context when you start reading an essay in school or in everyday life. At the very least, you know whether it's going to be history, philosophy, literary criticism, etc. before you start reading. It's not that way with an MCAT passage. With an MCAT passage, there is no context. You get oriented with an MCAT passage while you're simultaneously trying to read the first paragraph with comprehension. This is part of the challenge. The early life of Leonardo da Vinci? Furniture making in colonial America? The ethical responsibilities of educators? Think of the departments of a university or the sections of a library. Put the passage in context. Where does it fit in the world? It's important to be aware that you are not supposed to have your bearings when you start reading. It's easy to misattribute the lack of bearings at the beginning and think you are disoriented or in trouble. You're not disoriented. You're not in trouble. You just need to get situated. Give yourself a little extra time.

Take your time at the start

This is the MCAT. The prospect of running out of time is an issue for any section, and CARS is no exception. You need good flow and movement throughout the exam. However, spending a little extra time making sure you get a good start with a CARS passage will save time later. You'll get the time back. Sometimes the start of a passage is like opening a door and getting punched in the face. Get your footing. Give yourself permission. Later you will be reading more confidently. You will answer questions more quickly. Don't ever let a feeling of dread take hold of you if you have to go back and re-read the first three sentences. You're doing it right. Don't rush it at the start.

Tune in to the writer

No matter how abstract or obscure the subject matter, read on a human level. The writer and you are in a relationship. Speech is spoken and heard. Writing is written and read, but writing is a form of speech. Spoken language came before reading in your childhood. The human race evolved to use speech. Find the voice of the writer as if they were speaking to you. Bring your full ingrained capacity for understanding into play. Read on a human level. When you are in an everyday conversation, you comprehend meaning in a complex way that is hard-wired and pre-conscious. It doesn't involve just the plain meaning. You understand how the speaker feels

naturally. It's a kind of telepathy we gain in our language acquisition. Start every passage with confident, open engagement and find the voice of the writer.

Reading
Flow and structure

With an MCAT passage, you start at the top of the first paragraph, and later in time you will reach the bottom of the last paragraph. The flow of language is sequential in time. This is where you find the writer's voice, where you learn what they really think, through the flow of the language in time. But a paragraph has a structure, and the passage as a whole has a structure. To see the structure involves a kind of simultaneous processing. Good reading involves immersion in the flow of the writing balanced with a kind of stepping back to appreciate the structure of the argument taking shape as you move forward.

What begins as a conscious process of noting the transitions in an argument becomes more intuitive through practice. Some arguments merely make a claim; justify the claim; and then re-emphasize the claim as a conclusion. Some authors give critical perspectives the opportunity to make their best counterarguments against the author's central claims, so there are transitions in the point of view and modulations of the voice to give their critics a chance to speak. Other arguments mutate and transform through a kind of self-reflection to a place that was unexpected. As you move paragraph to paragraph, you come to understand the structure of the passage as a whole. The ability to see the structure taking shape as you move through the essay is a foundation for reading critically and one of the most important capacities to develop in preparing for CARS.

Staying in sync

Every MCAT passage has places where you may stumble in the reading. It may be as simple as a "former" and a "latter" referring to two things you've lost track of. There may be a shift in the point of view of the argument only subtly signaled by the writer in the transition. A presentation of factual information may overload the working memory. Never panic when you stumble. It was intended, not by the writer (they're doing their best!), but by AAMC. Now you know why AAMC chose this passage. Slow down. Look at the whole paragraph. Back up a few sentences to where you had the thread. Ask the writer in your imagination, "What are you trying to say right here?" This actually works. You can help the writer articulate what they were trying to say. Your unconscious may understand intuitively what they were getting at, but if it doesn't come clear, fence it in with your best guess or as an open question. Often an open question will resolve in a few sentences because the author anticipated your question and elaborates. Never resign yourself. Stay in sync. Always come to an accommodation.

After the passage but before the questions

Look at the whole passage

Now that you've finished reading, you can finally see the passage as a whole. Before going on to the questions, move through the passage quickly from top to bottom. A quick glance at each paragraph is enough. Just answer the question, "What are the parts of this thing?" Take 20 or 30 seconds and walk through it. You'll get that time back in the questions. Suppose it's a passage on furniture making in colonial America. It might go something like this - Here's where he described the life for the seventeenth century colonists. He describes the workshops of colonial artisans. Some of the artisans were joiners and some were turners. There were baroque influences from Europe which led to the introduction of the William and Mary style. Some historians have differing opinions about the originality of the American contribution to this style, etc. Simple as that. There are usually five or six parts to a passage. Answering "What are the parts of this thing?" before moving on will freshen the memory of many details, and it will give you a firmer sense of the structure of the argument before you move on to the questions. Understanding the structure of the argument is the key to understanding the main idea.

The Questions

Read the question stem carefully

Speed reading question stems will be punished in CARS practice. Learn to slow down and read them word for word. Take you time and read every word of the question stem. The question writer's art is on full display. As pure sensory input, nothing looks as much like a proposition as its exact opposite. The only difference is the word 'not' in the second one. Question stems challenge your focus, attention and mental discipline. If you misread the question stem, the question writer will follow up with a wrong answer that goes with your misreading. Part of the multiple choice test-writer's art as the intentional construction of failure pathways. Let the question be easy when they want to be easy, but understand what they are up to.

Answer the question stem by itself

This advice applies to the science sections and psych soc too, not only CARS. Sometimes the question stem is too ambiguous or open-ended for this, but wherever possible try to answer the question stem in your mind as if it were a short answer question before reading the answer choices. You don't have to finalize an answer. The point is to have a disciplined method of pausing a moment to think independently about the question stem before starting to read the answer choices. There was a moment when the test-writer was sitting at their desk with only the question stem too. They thought of the right answer first, and then they came up with their second best answer. Their second best answer is designed to act like a magnetic pull and anchor your thinking. If you wait until reading answer choices to start your thought process, you will give the second best answer the opportunity to dictate to you how you should be framing the question, but if you have your own thoughts, the second best answer will lose its power. Don't jump into the first answer that seems to mirror your thoughts. Sometimes a fatal flaw is built into an answer that looks right, but having thought independently prior to that point won't make you more susceptible. It will disarm this type of answer choice by making its

flaw more transparent. Answer the question stem by itself, wherever possible, before reading the answer choices. Don't go into their answer choices like a babe in the woods.

Don't commit too soon

No matter how tempting the first decent answer sounds, practice withholding judgment and process all the answer choices before you commit. Give them all equal weight at first. Often it will be clear, and you quickly get to the answer and move on. However, with a subtle, difficult question, be satisfied to get down to the two best at first. Don't make the first decent sounding answer the 'king of the hill'. This may put the correct one in the position of having to fight an uphill battle. Get down to two answers, and then attack them both. One will have a weakness in its armor that you can find. Choose the least worst of the two. That's going to be the right answer.

Let a question be easy when it wants to be easy

In any section of the MCAT, about a third of the questions are just easy. If it looks easy, just make sure you read the question stem carefully. Make sure you have read all the answer choices. Then choose the best answer. You know it's the correct answer. It is the correct answer! Let them be easy when they want to be easy and move on.

The difficult questions

There is the another third of the questions which are genuinely subtle and difficult. You get down to two possible answer choices in a difficult question, and neither one seems to be all that great. Sometimes they both seem to be pretty decent. Which one do you choose? Practice closing your mind to what's seductive about each answer choice. Plug your ears against the Siren song. Don't think about what's right about each answer. Think about what's wrong. Go on the attack. There are many ways an answer may disqualify itself. Maybe the question stem mentioned 'in the passage'. You can always take 'in the passage' to the bank. Maybe there is a fallacy of logic in the answer choice. Maybe the answer reflects what a good person should think, not necessarily what the author wrote. When you go on the attack, the correct answer will be strangely impervious to attack. It will be like a smooth stone, but you can find a weakness in the other one. You might not love the one that seems impervious to attack. You might have phrased it differently. That's what it means to be the least worst. Now you see it. It was obvious all the time. That's the correct answer, the least worst.

Pacing - Keep on the safe side of time

The degree to which time might become an issue for the CARS section varies quite a bit from person to person. Some people can finish comfortably without too much difficulty, while others may need practice to get to the point of comfortable pacing. Below is a simple method to stay out of trouble with time in the CARS section, as well as the other sections of the MCAT. We will have more to say about time management in the next CARS lesson.

The thirty minute unit of flow

Timing every passage will make it hard to focus. Instead of state of anxiety, you want to be in a state of flow throughout this exam. Flow is a mental state in which you have a feeling of energized focus, immersion and involvement. You can manage time and still keep your flow. A method that works for most people is to check in on progress only every thirty minutes. You divide the section into thirty minute increments. Thirty minutes is the unit of flow. This works for any section of the MCAT. You dive in and allow yourself to be completely immersed in reading the passages and answering the questions. When you come up for air after the first thirty minutes, make sure you have answered approximately twenty questions. Close your eyes. Take a deep breath and meditate a little bit. You're moving well. You've answered twenty questions. You are on pace to finish the whole section with ten minutes to spare. Dive back in and check in later at sixty minutes when you should have about 40 questions answered. You're doing fine. This is Plan A.

Plan B

Suppose you check in after the first thirty minutes and you've only answered fifteen questions. After all your practice, this should be rare, but it can happen. Maybe you forgot yourself and went a five minute fishing expedition for a single question. Relax. You've got this. You still need to close your eyes and meditate for a few seconds. Breathe deeply. It's going to be okay. You're just going to be using Plan B for the next thirty minute unit of flow. You don't need to change too much. You aren't going to start rushing the passages. That's a false economy. You actually got in trouble with the questions, most likely, and that's the place to get out of trouble. The next thirty minutes give yourself an extra half dozen get-out-of-jail free cards. When you feel you might be a little stuck on a difficult question, play one of these sooner than you normally would. You can make up a lot of time with only a few of these. You're in Plan B. Choose the least worst right away. Flag it. And move on. Do this five or six times. Maybe you get two or three correct instead of four, but, now, at sixty minutes you are back in sync with time. Maybe you're at 36 or 37 questions. It's true you won't have a lot of extra time at the end, but you've saved yourself from a much bigger problem. You are going to finish in time.

Putting it all together

Let's practice

Let's give ourselves 50 minutes to complete questions 36-65 from Critical Analysis and Reasoning Skills Question Pack, Vol. 1, the second five passages in the question pack. Remember to toggle 'Review Answer' to the 'OFF' position. Try out the core methods for CARS discussed in this lesson, and remember to tally your wrong answers as discussed in lesson 2 to make sure you're giving 'C' and 'D' as good a chance as 'A' and 'B' when you're answering the questions.

CARS Lesson 4 — Pacing Yourself

Don't let time push you around

Don't let time become your enemy in CARS. There are two ways this can happen. First, obviously, you can run out of time at the end of the section. This happens more often with CARS than with other section. You don't want to find yourself skimming the last two passages in the section and guessing on the last nine questions. With practice, you will not let this happen.

Furthermore, an oppressive anxiety can hover over you. This is the second way that time can get the better of you. Time can work itself into your mental space and get between you and your reading. If time pressure is a constant stressor, always cajoling you, it will make it hard for you to think straight. This pattern can become a self-reinforcing spiral. Learn to develop a sense of comfortable flow and movement. A few techniques can put time in its place so that your sympathetic nervous system doesn't feel the need to get involved.
Pace in the passage

Read at the pace of a conversation

Typically, a CARS passage will be approximately 600 words long. The average rate of speech in conversation is 150 wpm, so if you read at the pace of speech, you will clear a passage in approximately four minutes. This is just fine. Aim first for that baseline in practice. Comfortably read the passage at the pace of normal, conversational speech. Give yourself a few opportunities to slow down and process, a few instances to step back. Add the time after reading to look at the passage as a whole. If you are starting the questions in four and a half of five minutes in normal practice, you are going to be fine.

Some people read a little faster than this and hear the voice in the writing perfectly well, but if you push yourself to read much faster than normal speech, there is a good chance you will start to lose the sense of prosody in the writer's style. The prosody represents the patterns of stress and intonation in the language. Stylistically, prosody is central to the expressive dimension of meaning. The expressive dimension signals where the writer stands. Are they being ironic? Are they preparing for a shift in the point of view of the argument? You hear this subtly in the voice. Speed reading is counter-productive in CARS, and it's not really necessary. Read comfortably and slow down when you need to. Don't take all day, but don't rush either.

As a general rule, you are much more likely to get into trouble with time in the questions than in the reading. Additionally, there is a completely different relationship between the investment of time and the return on the investment between the two. Invest a little time to slow down or step back in a passage, and you will often get that time back later. You save time in the next paragraph because you kept the thread. You answer a question more quickly because you saw it coming. In the questions, however, it's a different story. It's easy to get transfixed in gambler's fallacy, like throwing good money after bad, and devote two or three

minutes to a single question. Maybe you have marginally increased your chance of getting that question right, but there will be no return on the investment later in the test. It won't make the next thing easier. In the reading, though, aim for flow, immersion, and enjoyment and try not to worry too much. As long as you are moving comfortably, you are going to be okay.

When to slow down

Sometimes the start of a passage will make your head spin. Get your footing. Give yourself permission. Don't ever let anxiety take hold of you if you need go back and re-read the first three sentences. If you want to skim the first paragraph again, you are doing it right. Get your bearings at the start.

You might also want to slow down or step back a few places later in the passage. It depends on the reading challenge you've run into. Never feel upset. Now you know why AAMC chose the passage. Some passages have a strong emphasis on facts and information. You might run into a passage about the history of bronze metallurgy, for example, and read something like, "The Egyptians were the earliest known miners of copper. Their main source was the island of Cyprus, from which the word copper is derived. The Phoenicians were great seafarers with access to Cyprus, Arabia and other lands, to the tin of Britain, and to both these metals and zinc and lead from Spain. They became skilled workers in bronze and carried their craft to many other countries." Each sentence here is like putting two or three more things into a wagon. Move too fast and things will start falling out of the wagon. If that happens, slow down and gather everything up again. You know a question is coming from this. You've know why AAMC chose the passage. They want to see if you can rehearse information and manage your memory.

For some writers, the style may be what's difficult, or the abstraction or complexity in the ideas. This is why AAMC chose this other passage. The writer has an idiosyncratic style, or maybe they are struggling to articulate ideas that are difficult to articulate. Essays from the domains of modern philosophy or literary criticism can be this way. In this type of passage, whatever you do, don't put the writer up on Mt. Olympus. Read on a human level. They are trying to communicate. You might run into a sentence such as, 'It is not difference that dominates the world, but the obliteration of difference by mimetic reciprocity, which itself, being truly universal, shows the relativism of perpetual difference to be an illusion.' Slow down. The author is struggling to articulate something that's hard to say, and you need to help them. Imagine the writer is there with you. Ask them what they are trying to say. Always reach an accommodation. Manage the part you don't understand as an open question. What do you think they're trying to say? Put it to yourself in plain language. Most of the time you'll be closer than you think.

See the passage as a whole

It may be tempting to skip this step, but it will save you time in the questions. Before starting the questions, always take twenty or thirty seconds to move through the passage quickly from top to bottom. Just answer to yourself, "What are the parts of this thing?" This will refresh your

memory of many details in the passage, and it will give you a firmer sense of the structure of the argument before you move on to the questions.

Pace in the questions

Don't make the perfect the enemy of the good

The art of letting a question go is the most important component of good time management in CARS. It's hard. There's a bit of a sick feeling. It's that way with even a 132. It doesn't take that long to read the question stem and evaluate the answers. If you think you have the best answer, or you think you've chosen the least worst, then you've done your job. Some of the questions are very subtle. Move on. You must have good movement. Your game is good. Finish on time and you will earn a good score.

Choose your answer. Flag it if you want to come back. Move on. If you have time at the end of the exam, you can come back to it. You can look at it then with fresh eyes. If it turns out that you don't have time at the end, however, then that's a very good reason you moved on.

Over and over again in our teaching, we have seen the pattern in practice testing where the person is forced to rush at the end where, earlier in the section, a half dozen questions took three minutes each. If you find yourself having done this in a section, look at the questions that took the most time. Look at how often the choice stayed the same. How rarely was the extra two minutes productive. Maybe one of the six you changed your answer and got it right, but it created a predicament that led to missing half of the last ten questions. Don't make the perfect the enemy of the good. Your game is good. Your score does not depend on a single question. A good score relies on comfortable, steady movement throughout the whole section.

Get-out-of-jail-free cards

It can be helpful to think of starting any section of the MCAT with a half dozen get-out-of-jail-free cards. If you feel yourself beginning to fixate on a particular question, play one of these. You have them for a reason. If you don't play a few of your get-out-of-jail-free cards, you are doing it wrong. When you play one, smile to yourself. You are doing it right!

Don't go fishing

It takes discipline, but it's a really good idea to avoid fishing expeditions in the passage for almost any question. If the question stem has a specific line reference, by all means, go look at it again. If the question stem contains the magic phrase 'in the passage', it might be a good idea to track it down if you can be quick, but only if you are sure exactly where you want to look. Otherwise, it's always preferable to answer without going back to the passage. People go back to the passage for emotional reasons, not for cognitive reasons. It takes too much time and almost never helps. Even if it helps, the time it takes will cause you to miss something else. You had a good read. You cleared the passage. Now stay clear of it if you can. Trust yourself.

Check in every 30 minutes

Plan A

In our opinion, timing every passage makes it too hard to focus. Save that for a mode of practice. During extended practice, you want to be in a state of flow, a mental state in which you have a feeling of energized focus and immersion. You can manage time and still keep your flow. A method that works for most people is to check in on progress only every thirty minutes. You divide the section into thirty minute increments. Thirty minutes is the unit of flow. This works for any section of the MCAT. Dive in and allow yourself to be completely immersed in reading the passages and answering the questions. When you come up for air after the first thirty minutes, make sure you have answered approximately twenty questions. Close your eyes. Take a deep breath and meditate a little bit. You're moving well. You've answered twenty questions. You are on pace to finish the whole section with ten minutes to spare. Dive back in and check in later at sixty minutes when you should have about 40 questions answered. You're doing fine. This is Plan A.

Plan B

Suppose you check in after the first thirty minutes and you've only answered fifteen questions. It can happen. Even after months of practice, it's possible to forget to remember what you need to be doing under test conditions. Relax. You've got this. You still need to close your eyes and meditate for a few seconds. Breathe deeply. It's going to be okay. You're just going to be using Plan B for the next thirty minute unit of flow. You don't need to change too much. You aren't going to start rushing the passages. Most likely, you got in trouble with the questions, and that's the place to get out of trouble. The next thirty minutes give yourself an extra half dozen get-out-of-jail free cards. When you feel you might be a little stuck on a difficult question, play one of these sooner than you normally would. You can make up a lot of time with only a few of these. You're in Plan B. Choose the least worst right away. Flag it. And move on. Do this five or six times. Maybe you get two or three correct instead of four, but, now, at sixty minutes you are back in sync with time. Maybe you're at 36 or 37 questions. It's true you won't have a lot of extra time at the end, but you've saved yourself from a much bigger problem. You are going to finish just fine.

Tough medicine

Sometimes a person will keep hitting the wall in practice with a particular section. It seems impossible to be able to ever finish that particular section on time. This is most common with CARS, but it can also be one of the other sections. You may have even tried starting that section in Plan B mode, but it still doesn't work. You can't seem to finish on time. Here is some tough medicine. If you make this iron rule, it will solve the problem. It always works. No matter what it takes, during the first fifteen minutes of the section, you must answer ten questions. You may not be happy for a few of those questions, but push yourself the first two passages and get it done. This will set you on good pace for the entire rest of the section. People almost always get

in trouble with time in the first half of a section, not the second half. You can relax into the flow of the test and finish on time.

Recentering yourself

Every thirty minutes

Yerkes and Dodson observed that for a difficult, complex task such as the CARS section, the optimal performance for an individual will be facilitated by a a moderate-low arousal state. Cultivate a mindset that is calm and engaged for the test and teach yourself how to nurture this mindset through controlled breathing, muscle relaxation and mindfulness even when the exam is at its most challenging.

Reset yourself periodically. During your thirty minute breaks, when you come up for air and check your pacing, close your eyes and meditate for a full thirty seconds. You will get the time back after you start back on the next passages. You will get even more than the thirty seconds you spent, because it will be like you gained five IQ points. Clear your mind and imagine you are somewhere beautiful. There's a cool breeze. Relax all of your muscles and breathe in deeply. Relax each muscle. Everything is fine.

After a difficult passage

A golfer hooks the ball into the rough and then slices it into the lake. That didn't go so well. But now the golfer has the opportunity to use the walk to the next hole to clear their head. They know their game is good. They use that walk to the next hole to calm their breathing and meditate so they will see the next fairway clearly. If a passage on the exam gives you a hard time, don't rush headlong into the next one. That's how the exam rolls you. Close your eyes and breathe deeply for a few seconds. Do a four-four-four breath. Breathe in deeply for four seconds. Totally relax and hold it for four seconds. Breathe out slowly for four seconds. Regain your balance. You'll get that time back. Close your eyes and totally relax. When you start the next passage, you will see it clearly.

Practice

Passage timing

Some people need to practice to improve speed in the passages. If it's regularly taking you more than five minutes to clear a passage and get to the questions, practice to develop a pace that will get you there sooner. You need a regimin. Practice a few passages each week using the timer on your phone, one passage a time. Start the timer when you begin reading. Check it when you reach the first question. You want to get this number under five minutes (six minutes is okay sometimes, but you will need great movement that passage in the questions). Through a disciplined practice regimin, you can internalize the sense of movement you need and habituate to it. The passages at Jack Westin or Testing Solution are where to go for this work.

Interpreting Prep Hub data

Remember, also, that the AAMC Prep Hub will give you timing data. The system doesn't give you a discrete passage time, however, because the system doesn't register the time from the start of the passage to the start of the first question. It registers from the start of the passage to answering the first question, but you can take a minute off to get a pretty good idea. If you need work with pacing, definitely visit and revisit this data. Remediate and practice. If there is a problem with pacing, the most common pattern is that there were a dozen or so questions scattered through the section you couldn't let go of. The second most common pattern is that one passage became a monster. There was a need to accomodate its uncertainties, take your hits, and keep moving. The third most common problem is too long a time in the reading. Practice to internalize the sense of movement you need and learn to accept playing a get-out-of-jail-free card every now and then.

Let's practice

As an assignment for this lesson, perform the last 11 passages (questions 66-120) from Critical Analysis and Reasoning Skills Question Pack, Vol. 1. Remember to toggle 'Review Answer' to the 'OFF' position.. Unusual for the question packs, this section has a question to passage ratio more in-line with a typical CARS section. Actually, it's even lower here. Compared to a full-length CARS section, we have two additional passages (11 vs. 9) yet only two additional questions (55 vs. 53). Allow yourself 100 minutes to complete the exercise. You have ten extra minutes, but with two extra passages, this actually represents a small application of time pressure compared to a regular CARS section. Establish and maintain a good pace. Try out the advice we've been discussing this lesson. Also, remember to close your eyes and meditate for a little while every thirty minutes. It's so important to give your brain a little rest every now and then. This exercise is not only for practicing exam pace. It's also an endurance challenge. Exam day is a long day. Remember to tally your wrong answers after you've finished the exercise, as we talked about in lesson 2.

CARS Lesson 5 — Blind Review A technique for CARS practice

There are two paths to the correct answer in a CARS question. The first path is to recognize the correct answer, simple as that. Alternatively, you can eliminate the other three, and the correct answer will be the one remaining you can't eliminate. Doing CARS right means following both paths in a parallel way. There are some questions where you're sure you see the correct answer, and the discipline to always eliminate the other choices saves you. It will save you from learning that the answer you were sure was 'correct' was appearing to be correct. This produces an uncomfortable realization of human fallibility. The question writer at AAMC is looking for you to be their mark. They are a master of sleight-of-hand. Mental discipline goes a long way.

Additionally, there are also the subtle, difficult questions you are uncertain about, even after everything you've done. You know you have to move on. Play a get-out-of-jail-free card. You don't have all the time in the world. Even on the way to a great score, a person will leave some questions behind they are uncertain about. You have to trust the odds and keep moving.

But what if you had all the time in the world, how would things work out? What if you could spend more time with the passage? What if you could evaluate the answers from every angle? What if you had more time to think? Blind review is a practice method for CARS that helps ingrain the comprehension level and thought processes that close the circle and get these questions right. Any person learning a difficult piece of classical music knows how valuable it is to start first at a slower tempo and speed up after you play it slowly without mistakes. If you just practice CARS in the traditional way, taking timed tests and going through the answers afterwards, it can be too much learning what you did wrong without ever learning how to do it right. The method of blind review combines timed practice with learning to think the questions through all the way.

Blind review

The purpose

This method starts out with a session of regular timed practice. However, after you get done, you wait to score the questions. You wait to learn which answers were correct and incorrect until after you've had a chance to carefully analyze the passages and questions more thoroughly. You're still going to get your original score. The session will still have the same diagnostic value it ordinarily would have had, but you will be learning a great deal to improve your thought process in the questions. Learn what it feels like to see the passages and questions all the way to the bottom of the well, and then fit that into exam pace.

The steps

After you complete the test or question set, do NOT check the answers. Be sure to toggle "Review Answer" to the off position if you are at AAMC question pack. If you are using blind review with a full length practice test, you need to give yourself extra time through the accommodations settings, but stop when you are supposed to. When your allotted time is finished, don't score the test yet. Go back through the questions and write down the question number of every question you were uncertain about. If you think there's even a small chance you missed the question, write the number down.

Next, go back and review every question un-timed. Go back to the passage. Get a clearer understanding of the author's argument. Study the questions until you have exhausted your thought process. Take your time. When you decide to make a change to an answer, don't replace it in the system or on your original answer sheet. You are still going to want to see how you scored in real time. Make the change on your list. If you change an answer, make notes as to the rationale, ie. "Didn't notice the author was actually criticizing this point of view" or "The causal connection in my original answer choice is too strong".

Now you can score your original answers. Your first score shows how you performed in time, but you also have a second score reflecting the answers you changed during your blind review. The second one will almost always be higher, although the further along in CARS preparation you get, the closer the two should become.

In comparing the two sets of answers, you will notice there are different categories.

Ones you changed and got correct - These are good. You had improvement. Look closely for what changed in your reasoning so that next time you'll get it right the first time.

Ones you changed and got incorrect - Try to understand what it is that drew you from a good answer to a bad one. Sometimes there can be a bias against your original intuition as a way of attributing the uncertainty you feel. (If neither the original nor the second were correct, then you really need to track down the issue. That question really tricked you.)

Ones you didn't change - The ones you got correct are fine, but pay extra attention to any that you still missed. These are important. There is an idea you still need to grasp.

Ones you didn't mark but missed - These questions were super tricky for you. Start a collection of these questions and make additions in future blind review sessions. You will start seeing patterns that will help you make adjustments.

Let's practice

Assignment: Perform the first 7 passages (questions 1-43) from Critical Analysis and Reasoning Skills Question Pack, Vol. 2. Remember to toggle 'Review Answer' to the 'OFF' position. Give yourself 75 minutes for the timed portion of the exercise. Before scoring the passages, perform a blind review!

CARS Lesson 6 — Claims backed by reason and evidence

Some arguments aim to convince, others to inform, and other arguments are an invitation to learn about a topic or an idea. Some arguments are looking for common ground. Some arguments make proposals for action. Every CARS passage is an argument. In choosing the particular CARS passage and designing the questions for it, the test-writers have created a kind of game you play well by giving the passage a close reading and then demonstrating in the questions that you understood how the argument justified its claims and whether the argument is persuasive.

Learning the various ways arguments are traditionally structured will make you stronger in CARS. Structure is central to communication in essay writing. The structure represents the map of the world each passage has invited you to explore. Understanding the structure of an argument is a big step to understanding what the author set out to accomplish in writing the passage.

CARS passages don't conform to textbook rules. Nevertheless, once you start looking, you will find the following traditional ways to structure arguments within many MCAT passages. The three most influential ways to structure argument in the humanities and social sciences are classical, Rogerian and Toulmin.
CLASSICAL ARGUMENT

Aristotle's Rhetoric is an ancient Greek treatise dating from the 4th century BCE. In these lectures, Aristotle developed the basis of a system that has influenced argumentation from ancient through modern times. The Rhetoric is regarded as the most important single work on persuasion ever written.

Why are we taking the time to review an ancient philosopher's ideas when we have all that organic chemistry to review? Like the other styles of argument we discuss in this lesson, we're looking at Aristotle's Rhetoric because it will give you some perspectives that make the strategies the authors employ in CARS passages more transparent. Still, we will try to be concise.

Rhetorical Appeals

To understand how classical argument works, you start with the three means of persuasion that the essay writer relies on: those grounded in credibility (ethos), in the emotions and psychology of the audience (pathos), and in patterns of reasoning (logos).

Ethos

An appeal to ethos is an appeal to credibility. How does the author present themselves to the audience? Authors build credibility by citing professional sources, and by sharing credentials or

background. Authors also build credibility by qualifying claims reasonably and presenting evidence in full. They also acknowledge important objections to their position.

Pathos

An appeal to pathos is an appeal to emotion. How does the work evoke feelings? Authors may achieve pathos in an argument through vivid imagery, story-telling or an impassioned style of writing.

Logos

An appeal to logos is an appeal to logic. It persuades the audience through reason and evidence. Logos develops through rational premises and conclusions in logically sequenced arguments or it involves inferences backed by data and statistics.

Structure

There are six components to the classical argument, usually in the following order:

Introduction (Exordium)

The author captures the attention of the audience with the exordium. The exordium gains the interest of the reader, situates the argument, and sets the stylistic tone.

Background (Narratio)

The narratio provides a brief account of the circumstances, conditions, or events the audience needs to be made aware of. What is the current situation? What created the situation? Who is affected by this? Who is researching this?

Proposition (Partitio)

Partitio presents the main idea or thesis. Partitio transitions from the narratio and outlines the reasoning that will follow in confirmatio to support the thesis.

Evidence and Proof (Confirmatio)

The confirmatio is the main body of the argument. Logic and evidence based reasoning is presented to support the claims and subclaims of the thesis. The appeal to logos is emphasized in confirmatio.

Counterarguments (Refutatio)

This section answers counterarguments to the thesis. With refutatio the author demonstrates that they really have considered the issue thoroughly and have reached the only reasonable conclusion.

Conclusion (Peroratio)

The argument ends with a summary of the most important points. Peroratio will often also include appeals to values and emotions to encourage the reader to agree with the author's thesis.

ROGERIAN ARGUMENT

Influenced by the humanistic psychology of Carl Rogers, the Rogerian method of argument is based on empathizing with others and seeking mutual understanding, while avoiding the unproductive effects of polarization. Rogerian argument carefully acknowledges and seeks to understand opposing viewpoints, rather than aiming to defeat or dismiss them.

In the 1970 textbook Rhetoric: Discovery and Change, the University of Michigan professors Richard E. Young, Alton L. Becker, and Kenneth L. Pike developed an influential structure for argumentation that is now known as Rogerian argument.

Introduction

The argument begins with a description of the problem in terms that are rich enough for opponents to identify with. The introduction is an invitation for everyone to see the benefits of positive change and want to work to solve the same problem.

Summary of opposing views

In as fair and neutral a way as possible, the views of opposing positions are stated in a way that demonstrates true consideration of their merits.

Statement of validity

The writer describes the contexts in which the opposing views may be justified. There may be conditions under which the writer may share the views.

Writer's position

The writer states their own position and the circumstances or conditions in which their opinion would be valid.

Statement of benefits

Appeal is made to the interest of opponents in adopting the writer's position.

It is extremely valuable in CARS passages to recognize when an author shifts into a Rogerian mode. There may only be a few subtle indications that the author is presenting a position they actually don't fully agree with. Sometimes you have to see the entire structure of the argument to understand that the author doesn't actually share the position. In Rogerian argument, different points of view may be tried on for a while like clothes to see if they fit. A formation within Rogerian argument can sometimes move from thesis (maybe it's this way) to antithesis (oh wait, maybe it's that way instead) then on to synthesis (here's what I really think). In a wrong multiple choice answer, MCAT question-writers love to see if you will attribute a point of view to the author that the author actually argues against later in the passage. Speed readers can get punished in questions like this. Sometimes the main idea will depend on the whole structure of the argument, not a particular point of view explored within a part of it.

TOULMIN ARGUMENT

Developed by the British philosopher Stephen Toulmin and published in his 1958 book The Uses of Argumentation, the Toulmin model of argument is not only for analyzing arguments but also for constructing them. If you can internalize this framework so that it becomes natural and intuitive, you will become both a stronger reader and writer. On the CARS section of the MCAT, you will find you are predicting many of the questions before you get to them.

The starting point for the Toulmin framework is that for an argument to succeed, it needs to provide rational justification for the claims it makes. Such an argument can stand up to a critical reading. Toulmin proposed six interrelated components for analyzing arguments to see if they provide rational justification for belief.

Claim

This is the statement of fact or opinion the author is asking their audience to believe to be true. What's the author's position? What's their point? The aim of an argument is to establish a claim as a justified belief. In some arguments the claim takes the form of a thesis statement.

Evidence

The evidence (grounds) are the facts or rationale that the author will appeal to as the basis for the claim. The evidence makes the case for the claim.

Warrant

The warrant establishes the connection between the claim and the facts supporting it. The warrant is the underlying link between the evidence and the claim. If the warrant is strong, the claim is warranted by the support provided.

Backing

Backing refers to additional support of the warrant. It tells the reader why the warrant is a rational one. The warrant asserts that the evidence is sufficient to obtain assent to the claim, but in many cases, the warrant is implied. Backing may be a specific example that justifies the warrant.

Rebuttal

Rebuttal acknowledges another valid view of the situation. This is where the author addresses potential objections to the claim.

Qualifier

A qualifier shows that a claim may not be true in all circumstances. Words like “presumably,” “some,” and “many” help the author communicate they know there are instances where your claim may not be correct. A qualifier adds nuance and specificity to the claim, helping to counter rebuttals.

The Toulmin model is a heuristic that helps you evaluate the substance and quality of an argument. One of the preoccupations with CARS, for example, is the concept of the main idea of the passage. In the Toulmin model, this is the argument's claim along with qualifiers and exceptions.

Additionally, reading critically means evaluating the effectiveness of evidence. The Toulmin model gives us a framework for evaluating evidence. You interrogate the evidence for its warrant. Sometimes the warrant will be a value judgement. If you restate the value being invoked as clearly as possible you might see the author waving their hands to distract you from the weakness of their argument. When you spot a weakness in the passage author's argument, you know a question is coming.
Putting it all together

Please don't take this lesson to mean that every CARS passage exactly conforms to one of the above structures and it is a productive exercise to figure out which one it is. That would be distracting! Most passages actually possess aspects of all three - classical, Rogerian and Toulmin. The purpose of learning about the structure of argument is to be more sophisticated in critical reading. Understanding traditional structures of argumentation helps you understand the challenges the author is trying to overcome in effective communication, and it helps you understand the point of view the test-writers at AAMC. This is the perspective they bring to writing the questions.

When you are reading critically, you are asking questions like - What is the purpose of this argument? What does it hope to achieve? Does this argument appeal to me? If it does appeal, then what strategies did the author employ? Why does it succeed? What kinds of appeals does

it make? To ethos, pathos, or logos? Does it anticipate and give respectful hearing to counter-arguments? What claims does it make? Are they warranted by evidence? How is the argument structured?

Let's practice

Students often make a mistake in MCAT preparation assuming that because they complete a passage and review the answers carefully, they are done with that passage forever. On the contrary, you can learn a great deal from the passages and questions you have already done. You are starting to know those passages pretty well, but think of how well the person at AAMC knew the passage when they wrote the questions. Try to reach that state, where you can see a passage all the way to the bottom. Try to get to that place with a few of the passages we completed in earlier lessons.

At this stage we have completed all passages in CARS Question Pack 1 as well as the first seven passages of CARS Question Pack 2. Choose three or four passages you have already done and take some time to read those again carefully. Study them in the light of the content of this lesson, structures of argumentation. Study a few passages in the light of the classical, Rogerian, and Toulmin models of argument. Next, imagine you were the question-writer and then go to the questions and review what the actual question writer came up with.

CARS Lesson 7 — Types of CARS passages - Kinds of arguments

The more you understand the craft of the essay writer, the more you can help them close the circle in communication. Understanding the structure of argumentation is useful, and it's useful for us to discuss the types of arguments you will run into. Part of being a local in any city is to have an idea of what to expect. Although a few may defy easy categorization, the passages you will encounter in the CARS section of the MCAT will include arguments of fact, arguments of definition, arguments of evaluation and proposals. Each of these types of argument have different general characteristics which we will discuss in this lesson.

ARGUMENTS OF FACT

Factual arguments seek to demonstrate whether something is or is not the case in the world. This type of argument typically seeks to settle a controversy or challenge established beliefs. What is the true economic impact of an environmental regulation? Does music education really help build math skill in children? How did Indus civilization avoid the militarization seen in other ancient agrarian civilizations? Disagreements about factual matters often aren't as easy to resolve as one would think. Facts and information need to be interpreted. Evidence may be confounding. It may be that there isn't that much evidence in the first place.

The writer in a factual arguments will often set the stage with a series of observations. This will be followed by the introduction of a hypothesis and counter-arguments. The type of evidence brought forward in a factual argument will typically be 'hard' evidence rather than constructs of logic or reason. Here are some questions to ask of the passage.

What is the issue at stake?
Is there a controversy? What are the different points of view?
Where does the author stand? What is their hypothesis
How do they refine, condition, or qualify their claim?
How good is their evidence? Is the evidence warranted?
Is the organization of the argument effective?

An additional challenge with this type of MCAT passage is to organize the details while you are reading. As details pile on, it's okay to slow down rehearse information or step back and look at how information is organized. The workshops in the countryside used linseed oil and beeswax but the city workshops sometimes used shellac or oil varnish . . . You generally don't need to memorize everything, but you do need to keep the information mentally organized. For practice of these reading skills, Charles Mann's 1491 and Brad DeLong's The Melting Away of North Atlantic Social Democracy are both good examples of arguments of fact from our collection of supplementary reading.

ARGUMENTS OF DEFINITION

Before we can think clearly about an issue, we have to understand exactly what the terms mean. An argument of definition attempts to clarify a definition of a controversial term or concept. Definition arguments try to establish whether someone or something belongs to a certain category. These are issues you can't solve with a dictionary. Is the snail darter an endangered species? Is there such a thing as a just war? What is human intelligence?

Some definitions are formal definitions. These definitions assign class membership by specific criteria. A bird is a warm-blooded egg-laying vertebrate distinguished by the possession of feathers, wings, and a beak. That's a formal definition. In contrast, an operational definition helps us grasp something that can't be directly measured. Operational definitions define in terms of procedures that reliably produce a differentiated outcome. Many definitions in the fields of medicine and psychology are operational definitions. An operational definition identifies the thing by its measurable activity or what conditions create it. Lastly, definition by example seeks to assign a definition based on similarity to a list of other class members.

Arguments of definition often begin with the claim of asserting that something is or is not a member of a class. Situation comedies do not qualify as art . . . If you're getting paid, then you're not a volunteer . . . Racism can exist in an organization whose individual members are not racist. To establish the basis for the claim, the argument usually will then formulate a general definition. Art is defined as . . . A volunteer is . . . Racism is . . . In the Toulmin framework, the general definition serves as grounds for the claim, and the substance of the argument is to show that the claim is warranted.

Some of the most challenging passages you may run into on the exam are arguments of definition from the domains of modern thought. Jean-Paul Sartre's Existentialism is a Humanism and Michel Foucault's Madness, the absence of an œuvre are two examples of this genre.

ARGUMENTS OF EVALUATION

An argument of evaluation makes a judgement about quality. The evidence in support of an argument of evaluation may be hard evidence, such as statistics or survey results, or it may be qualitative evidence that relies on subjective criteria. An argument of evaluation may not only be about making a judgement about quality. The focus of the argument may be to explore the criteria for judgment. See Pauline Kael's Circles and Squares.

Here are some questions to ask of the passage while reading an argument of evaluation.

What is the author's claim?
Is there a controversy? What are the different points of view?
What are the author's criteria of evaluation?
What type of evidence does the author present?

An arguments of evaluation will often generate a CARS question involving 'reasoning beyond the text'. Almost every passage of this type is followed by a question asking you to apply the author's criteria of evaluation to something not mentioned in the passage. Try this out with David Foster Wallace's Shipping Out.

PROPOSALS

A proposal is an argument calling for a change in policy or practice. Proposals aim to be persuasive, so they are focused on the audience and the future. Proposals begin by first establishing that a problem exists. Whenever a passage starts out with a vivid picture showing a problem affecting people, start looking for the central claim of the argument, which will be the merit of the author's proposal. George Orwell's famous essay, Politics and the English Language, demonstrates the basic form of this type of argument. Typical components of proposal arguments are as follows.

Claim of the existence of problem or need that is not currently being addressed.
Warranted evidence for the problem.
A second claim proposing a solution - the set of actions to take in the future.
Warranted evidence for the feasibility and effectiveness of the solution.
Acknowledgement of counter-arguments and counter-proposals.

Because the author in this type of argument will be trying to make a strong claim of both the problem and the solution, proposal arguments are very generative for questions that call on you to make inferences towards the author's point of view that extend beyond the text. Questions regarding the scope the author's claims and the extent to which the claims are warranted by the evidence are also very common, as well as questions that ask you to determine the most effective evidence for a counter-argument from the answer choices. When reading a proposal argument, it's a good idea to take the position of someone who will be difficult to persuade to encourage you to read these arguments critically.

Let's practice

Assignment: Perform the 2nd 7 passages (questions 44-80) from Critical Analysis and Reasoning Skills Question Pack, Vol. 2. Remember to toggle 'Review Answer' to the 'OFF' position. Give yourself 65 minutes for the timed portion of the exercise. Before scoring the passages, perform a blind review!

CARS Lesson 8 — Types of CARS questions
Five basic kinds of CARS questions

Some CARS questions defy easy categorization, but many will fall into one of these five categories:

Main Idea
These are general questions dealing with the cardinal issues of the passage. Main idea questions are designed to see if you grasped the central theme of the passage as a whole. Often the main idea is the author's central claim towards which the rest of the passage is pointing as evidence, warrant, backing or counter-argument. Typical question prompts of main idea questions are the following:

The passage as a whole suggests that the author believes that . . .

Which of the following would be the best title for the passage?

The author's main purpose of the passage is to . . .

Author's Tone
This type of general question asks whether you understood the author's point of view on the subject of the passage. These questions are often subtle. Is the author being critical or supportive in this portion? Is their tone objectively neutral or biased and partisan? The differences among the answer choices in tone questions can sometimes be hard to tease out. Prompts for tone questions will be similar to the following:

The author's attitude toward his subject is one of . . .

Which of the following characterizes the author's likely intended audience?

The tone of the passage might best be described as . . .

Thematic Extension
These questions are in the same family with the main idea or tone questions, which deal with the passage as a whole, but thematic extension questions ask you to take the author's argument or point of view and draw a conclusion about another subject or derive a broader proposition. These questions can have prompts that look like the following:

How would the author of the passage respond to . . .

Which of following would the author probably recommend in a situation where . . .

It can be inferred from the passage that . . .

Specific Inference
These questions will identify a specific section of the passage and ask for an interpretation that goes a little deeper than the explicit reference, asking you to read 'between the lines'. These questions are often about judging the shade of meaning the author puts on a word within a specific context. Very often, this type of question is looking to see if you can interrogate a claim for unstated premises or implied warrants. Typical question prompts often including phrasing such as:

The author uses the term ____ in line ## to mean . . .

Lines ## - ## imply that the author . . .

The author brings up the example of ____ in order to . . .

Facts & Information
On one level these questions are a test for your retention of specific facts or concepts stated in the passage. However, on another level, they are a test of how well you synthesized and retained the organization and flow of the passage. Be careful when answering this kind of question that in returning to the passage to find the information you don't go on a fishing expedition. Typical prompts include phrasing such as:

The author states that . . .

According to the passage, who was the first person to ever . . .

Which of the following does the author claim . . .

Each type of question has its own 'tricks' and tendencies. Start looking at your performance in terms of these five types. Look for specific challenges you may need to work on.
Let's practice

Assignment: Perform the final 7 passages (questions 81-120) from Critical Analysis and Reasoning Skills Question Pack, Vol. 2. Remember to toggle 'Review Answer' to the 'OFF' position. Give yourself 65 minutes for the timed portion of the exercise. Before scoring the passages, perform a blind review!

CARS Lesson 9 — The test writer's perspective
Choosing the passages

Let's imagine a day in the life of an MCAT test-writer. Each section of the MCAT has a team at AAMC, a group of master and apprentice test-writers. The job of putting out an MCAT involves a great deal of knowledge and experience. Some of the people there have decades of experience. They are smart and knowledgeable people. For any section, it's good to think of the MCAT test writers as teachers. Maybe this is cloyingly earnest, but they are trying to make you stronger. For the science sections, deep study of the passages and questions shows the scientific foundation you need to bring to medical school.

One very good perspective to internalize about the science - and psych soc - passages is that everything in a science passage on the MCAT is intended by the test-writers. This may seem obvious or unnecessary to say, but think about it anyway. The intention of a particular sentence within a science passage might not be to communicate directly. It may be an intentionally constructed challenge to intelligibility. A sentence might be cryptic, such as this simple example, protein X binding of ligand Z involves a negatively charged residue within the Y domain of protein Z. The author knows the residue is aspartate! If they were trying first and foremost to communicate with you, they would have identified the residue. It's easy to just read the sentence without seeing what they're up to or to think the challenge is just keeping X, Y and Z straight. What are they doing? You can see there is a question coming where the answer is aspartate or glutamate.

It's different with a CARS passage. The author of a CARS passage is third party and the passage was chosen unaltered. Every sentence of a CARS passage reflects the author's intention to communicate. If that's the case, then why do I stumble in the reading? The author is doing their best! The difficulty you run into may reflect the author's struggle. Help them! The ideas of the author may be difficult to articulate, or they may stumble sometimes in the writing, or you stumble in the reading. You and the author work together to make communication happen. Although it may be hard to remember this advice, never let stress take hold of you when you run into difficulty in a CARS passage. The difficulty is supposed to happen. Now you know one of the reasons AAMC chose the passage for the test. They ran into that part too!

With CARS passages, the test-writer intention isn't a subtext of the writing in the particular way it is in science passages. In the CARS section, the test-writer intention is strong in the choice of the passage. CARS passages present reading challenges that are generative of main idea, author's tone, thematic extension, specific inference and facts & information questions. Have you run into a paragraph where the author presents a set of details with a variety of distinguishing criteria? A facts & information question is coming from that. Was the author dismissive towards a counter-argument or enthusiastic about an idea? Here comes an author's tone question. Did you notice that you had to wait until the end of the passage to understand what the author really thinks? A main idea question is coming.

Writing the questions

For every CARS passage, there was some point in time in the past when it was only a passage on someone's desk at AAMC. The questions hadn't been written yet. Every now and then, put yourself in that place. Read a CARS passage as if you worked at AAMC and had to come up with the questions yourself. What is the creative, generative process connecting the passage to the questions? The test-writer brings everything they know about the structure of arguments, the different kinds of arguments, and the challenges they pose for reading comprehension. Insights will arise that will lead you to many of the questions before you reach them.

Writing CARS questions is a creative, generative process. The passage gives rise to the questions through a projection of the imagination. When you're writing CARS questions you're imagining how hard the reading might be for someone else based on your own experience. The starting point for a question is the question stem. Below is a collection of question stems modeled after the AAMC style.

> Which of the following statements, if true, would most directly challenge the assertions of the author regarding the origins of the Oxus civilization?
>
> What is the main idea of the passage?
>
> According to the passage, the primary role of the university provost is to:
>
> Suppose that a preservationist were creating a proposal to save an architectural landmark. The author of the passage would likely advise them to:
>
> The passage suggests that the author believes teaching music appreciation at the high school level to be important because it:
>
> Elsewhere, the author says that “A teacher cannot serve as a substitute parent, nor should they try to be a substitute parent.” This statement agrees most closely with the passage assertion that:
>
> The author’s attitude toward the role of humanities in the education of scientists is most accurately described as:
>
> Which of the following statements, if true, would most weaken the argument of proponents of social strain theory?
>
> Assume that a trove of Egyptian artifacts were discovered at an Indus valley archeological site. How would this information, if true, affect the passage author’s argument?

Which of the following assertions is NOT clearly supported by sociological research provided by the passage author?

What role does the author's statement "Grant, at least as President, has a poor historical reputation." play in the passage?

The author uses the word freedom in the sense of:

What is the author's response to the consensus explanation for the origin of writing in ancient Mesopotamia?

According to the passage, the auteur theory of criticism focuses primarily on which of the following aspects of a work of cinema?

Implicit in the passage is the assumption that:

For which of the following conclusions does the passage NOT offer direct evidence?

The author of the passage rejects the phenomenological approach in art criticism because:

The author of the passage would be most likely to agree with which of the following ideas?

Writing the answer choices

Understanding what the authors of the passages are trying to communicate is a precondition for doing well in CARS, but when you answer a question correctly, you also come to understand what the test-writer has been trying NOT to communicate. Which is the correct answer? Which are the incorrect answers? There are two ways to the answer. You see that the correct answer is sound, or you see that the other three are unsound. They are the three wrong paths. They invited you to follow them, but you were on to them! That wrong answer is ungrounded. That one only pretends to answer the question. That one's just nonsense. When you see the correct answer and know why it's correct and also see the wrong answers and know why they're not correct, you won that round and you move on. You see the intentions of the test-writer.

The whole thing is a silly game, but playing well seems to correlate with a person's general abilities in making written language intelligible and in finding the rational basis in argument. This is how the admissions process operationalizes the measurement of those abilities, so we have no choice but to take it seriously.

There was a time when there was only the passage on the desk at AAMC. Then there was a draft of the question stem. Then the test-writer wrote the correct answer first, before the wrong answers. In the test, you can get ahead of them right here, before a wrong answer

anchors your thinking to its framework. If there's enough to go on, treat the question stem as a short answer question and answer it mentally to yourself before reading any answer choices. Act for a moment like you have the job of writing a correct answer. Give yourself a foothold of independent thinking before you start reading the answer choices. The correct answer may not look like yours, but you will be able to read the answer choices much more critically. Have your own thoughts before letting the test-writer think for you with their wrong answers.

After the test-writer composes the correct answer, they compose the wrong answers. They are good at this at AAMC, and they are proud of it. It takes real skill to master the art of being wrong but still sounding right. This is not a reliable key in any way, but let us share a secret. As a test-writer, it's incredibly tempting to put your most subtle wrong answers before the correct answer in the choices. This is a vice in multiple choice question writing. With a group as sophisticated as AAMC, you won't be able to make a fool-proof method out of this perspective. We're sharing this to give you insight into the psychology of the test-writer. If they could get away with it, the test-writer would always prefer the person taking the test not to see the correct answer too soon. They would always prefer you to wrestle with their best wrong answer first. They have a desire to fool you. Wrong answers are motivated. You can often sense it like a 'tell' in poker.

There will be at least a few questions where you find yourself down to two answer choices, and, unfortunately, they both look pretty good. In this situation, it helps to remember something fundamental about the test-writer's process. The test-writer has put something into one of those two answers that makes it unsound. They did this as an intentional step. Stop listening to what's right about each answer. You know that already. That's why you're stuck. Think about what's wrong. Go on the attack. There are many ways an answer may disqualify itself. The point is that when you go on the attack, the correct answer will be strangely impervious to attack. It will be like a smooth stone, but there is a weakness in the other one. You might not love the one that seems impervious to attack. You might have phrased it differently. That's what it means to be the least worse. You can eliminate the other one because now you see what the question-writer did.
Let's practice

Assignment: pretend you work at AAMC on the team constructing the CARS section of the exam. Some candidate passages have been selected. Now its time to write the questions. In one the sets of exercises below, the goal is to write a set of question stems. For the other other set, the goal is to create a correct answer and also a 'tricky' wrong answer to go with each of the question stems provided. There is no score for this. The goal is to get stronger at answering CARS questions through a better understanding of the job of the test-writer.

CARS Lesson 10 — What is the main idea?

The proposition that there will always be a main idea depends on two premises: that every piece of writing is an argument and every argument has a central thesis. You may run into a passage occasionally where it doesn't seem that way. The author may be exploring a set of ideas. Some essays are historical or biographical narratives where there is a theme instead of a main idea. If it's difficult to determine the main idea, ask yourself why the author sat down to write the essay. This is a good place to start.

For most passages, it's fairly straightforward. Many essays ARE working to establish or justify a central claim. They have a thesis. There may even be a thesis statement. The purpose of the writer in sitting down to write the essay was to present rational grounds for justified belief in their thesis. They are trying to convince you. That's the main idea!

For any CARS passage, the working assumption should be that there definitely is a main idea and you need to figure out what it is. For every passage, consciously determine the main idea before moving on to the questions. If you make a discipline of this, you will find many of the questions much easier. This applies not only to the 'main idea' and 'thematic extension' types of questions but the other types as well.
How to determine the main idea of a passage

Look at the whole passage

In earlier lessons, we described the crucial step after reading the passage but before moving on to the questions. We can finally see the passage as a whole. We move through the passage quickly from top to bottom to answer the question, "What are the parts of this thing?" This step refreshes your memory of many details, and it gives you a firmer sense of the structure of the argument. The structure of the argument was created by the author as a vehicle to support the main idea. Seeing the structure of the argument at this stage often gives you a clear understanding of the main idea.

What kind of argument is it?

In seeking to determine the main idea, as a starting point, it can be very clarifying to recognize the kind of argument the passage represents. Is it an argument of fact, an argument of definition, an argument of evaluation, or a proposal? For example, when you see that you are dealing with an argument of fact, you can ask yourself, "What is the issue at stake? Where does the author stand? What is their hypothesis?" It can likewise be very clarifying to recognize a passage as an argument of definition, where the main purpose is to assign attributes or class membership to an idea or thing. If it's an argument of evaluation, the main idea is often the verdict of the author's rational or aesthetic judgment. If it's a proposal, the main idea may simply be advocacy for a change in policy or practice.

How is the argument structured?

After seeing the passage as a whole and recognizing its overall structure, you will often gain reinforcement of your sense of the main idea. If the argument was persuasive, you will see how the different parts of the passage made it successful. If the argument was not successful, you see what the author tried to do. Rhetorical analysis is a mode of critical reading in which you "see how the sausage is made". The main idea is the central claim of the argument. In a classical argument, the central claim is called the thesis. You see the portions of the argument providing warranted evidence for the thesis and the portions providing support in the form of logical reasoning. You see the portions where the author conditions their claim or provides exceptions and where they deal with counter-arguments. You see how it all serves the main idea. You've done your job. You're going to move through the questions for this passage quickly.

Be careful to distinguish counter-arguments

In our experience, one of the most significant pitfalls on the way to the main idea of a passage is to mistake the author's presentation of a counter-argument for the author's own point-of-view. For example, in Rogerian argument, there is a norm in seeking common ground to state the views of opposing positions in a way that demonstrates true consideration of their merits. The counter-arguments in Rogerian argument often appear towards the beginning of the passage, after the general introduction of the problem. It's very important to pay careful attention to the tone of the writer. Oftentimes, the writer will signal critical distance from a position with phrasing such as 'Historians have long believed that . . .' or 'There are good arguments for . . .' It can be subtle. Cultivate an openness to the author transitioning out of this mode. When they take a stronger, more declarative mode in a later paragraph, they are revealing their own point-of-view in the argument.

It can be even more subtle in arguments that have a dialectical structure. Instead of following the classical pathway starting with thesis then evidence then counter-argument then conclusion, the dialectical rhetorical figure starts with thesis then antithesis then synthesis. Dialectic is a favorite approach for writers in the world of continental philosophy (modern philosophy from the French and German speaking worlds) and critical theory. In this type of essay, it can seem like the author went out on a limb with the thesis only to saw it off. The thesis turns out not to be the main idea after all. It's in the synthesis. Where you wind up at the end is not where you expected you'd be. This is known as deconstruction or post-structuralism. It helps with this kind of essay to imagine an internal debate that is always striving to transcend itself. Go with the flow and don't be over-awed by the writer's dance and you'll be okay. At their most difficult, these can be very difficult. The ones that occasionally make it to the MCAT aren't so bad.

The point with both Rogerian and post-structuralist styles is to bring an openness to recognize the passage as an exploration through a kind of dialogue on the way to the main idea. As different points of view are explored, pay careful attention to the author's tone, the strength of evidence, and the questioning of the warrants of evidence. Look for where the author 'inhabits'

the argument instead of 'positing' the argument to later pivot from. Often it's in the tone where you find confirmation of the author's point of view and the main idea.

Let's practice

Begin working through Step 2 and Step 3 of the CARS Diagnostic Tool. Pace yourself to complete the curriculum provided by this resource within the next four lessons.

CARS Lesson 11 — Implied premises and warrants
The missing pieces to the puzzle

You don't have to be a superhuman reader to get a great score on CARS. Your unconscious intuition is more powerful than you may credit. At times when you're reading, you will have a sixth sense that the writer hasn't closed the circle. Something is missing in the argument. The writer is taking something for granted. They may seem to expect you to take it for granted. You don't have to. It's good to have a bit of a framework to resolve what may be going on. Are the authors premises sound? Is their evidence actually warranted?

We're supposed to get to the end of these passages in four or five minutes. It's impossible to turn over every stone. It's unnatural to expect it! How are we supposed to read these essays at the pace of speech; form a mental image of the structure of the essay; determine the main idea; and also investigate the essay for implied premises and warrants while we're reading? You do your best. That's the answer. Pausing or backing up in a passage every now and then is doing it right, but, even then, you are always moving forward with a sense of flow, engagement, and zero stress.

Remember that the question-writer has taken a lot longer with the passage than four or five minutes. They have hours and hours to write the questions. It's unfair to expect yourself to have seen everything in the passage they will have seen, but still you try. You try to see all the way to the bottom all the time.

In every kind of communication, the audience is routinely called upon to help construct the meaning. Premises are often unstated, or the warrant for evidence may be implied. Reading closely from a critical perspective examines unstated premises in deductive argument. In deductive logic, a conclusion is sound only if the premises are sound.

In inductive argument, you read closely to make sure evidence is warranted. Does the evidence have strong connection to the claims it is being used to justify? For justification by inference from evidence, the conclusion is sound only if the evidence is warranted.

When you get down to brass tacks, this particular lesson is about keeping you out of trouble with particular kinds of CARS questions. The question-writer will have mined the passage for unstated premises and implied warrants. They are looking for the raw materials for making a question. The particular type of specific inference question dealing with an unstated premise may seem really subtle. You may not have noticed the implication in the passage, but you are primed to see what the test-writer is up to. Questions like this become much easier if you have a little background. Let's talk about unstated premises and implied warrants.

A logical argument with a missing premise is called an enthymeme

What is a syllogism?

Let's start with the simplest kind of deductive, logical argument, the syllogism. A syllogism is a kind of logical argument that applies deductive reasoning to arrive at a conclusion based on two or more premises. In deductive logic, the premises are propositions which are asserted or assumed to be true. In a syllogism, a conclusion is deduced from the combination of a general statement, called the major premise, and a specific statement, which is called the minor premise. For example, if we know that all people are mortal (major premise) and that Socrates is a person (minor premise), we can conclude with 100% certainty that Socrates is mortal. As long as the major and minor premises are both true, the conclusion must be true. Syllogistic arguments are usually represented in three lines:

All people are mortal.
Socrates is a person.
Therefore, Socrates is mortal.

An enthymeme is a truncated syllogism

A syllogism with an unstated premise is an enthymeme. Here are some examples with the implied premise in italics.

Socrates is mortal because he's a person. (All people are mortal.)

Rosemary lied to me last week, so she can't be trusted. (Liars can't be trusted.)

You'll be successful. Just follow your passion! (All people who follow their passions are successful.)

I can't believe Bill scammed you. I've known him for years! (No friend of mine is untrustworthy.)

Senator Simmons wants to increase regulation. He's a socialist! (Anyone who wants to increase regulation is a socialist.)

In its logical structure, an enthymeme asserts the truth of a statement the author hasn't explicitly said. The conclusion depends on it. The author implies the unstated premise. A typical CARS question may ask you to supply the missing premise. You may not have picked it up in the reading, but these questions are not too hard if you see what the question-writer is up to. Alternatively a question may ask you to judge the effect on the author's argument, hypothetically, if the missing premise were NOT true.

Implied warrants

Inference from evidence

We discussed enthymemes above. An enthymeme is a truncated syllogism. A syllogism is a form of deductive reasoning. With deduction, as long as the premises are true and the logic sound, the conclusion is true. Deductive reasoning relies on formal logic. Many, if not most, everyday examples of reasoning and justification, however, don't rely on formal logic but informal logic. Informal logic governs the truth value of inferences we make based on evidence. An inference is not a kind of deductive reasoning. Inferring the truth of a claim based on the evidence is reasoning from experience. With inductive reasoning, you can't achieve absolute certainty. However, if something is almost certainly true, that is reasonable grounds to believe it! Scientific theories are based on inductive reasoning.

The warrant is the connection between a claim and evidence

We discussed the structure of Toulmin argument in lesson 6. Toulmin identified three main parts to any argument. The first part of any argument is the claim (also called thesis or proposition). The second is the evidence (also called grounds or data). The third essential part of any argument is the warrant. The warrant is the connection between the claim and the evidence supporting it. How is this evidence relevant to the claim? How strong is the support provided by the evidence? That depends on the strength of the warrant. Let's look at a simple argument as an example:

> Jonathan must be ill, since he has a cough.

The claim is "Jonathan is ill". The evidence in support of this claim is, "Jonathan has a cough." Where's the warrant? The warrant here is not explicit. More often than not, the warrant for evidence will be implied. The warrant here might be expressed, "A cough is a sign of illness." In this simple, obvious example, you can see how Toulmin provides a basic, general framework for analyzing the likelihood of the truth of a claim. Making the warrant explicit is how we interrogate the strength of the evidence. You can never be absolutely certain with inductive logic, but likelihood of truth is reasonable justification for belief. Suppose we learned that 95% of the time, in clinical presentation, a cough is a sign of illness. This would support the warrant for the evidence (if Jonathan were in a clinic). Support for the strength of a warrant is called its backing.

In the CARS section of the exam, you are likely to run into a specific inference question dealing with an implied warrant for evidence. A question may ask you to supply the warrant, ie. the author assumes that . . .. Alternatively, a question may ask you to judge the effect on the author's claim if the strength of the warrant were undermined. These types of questions are very similar to those that might arise from an enthymeme. As a matter of fact, in the Rhetoric, almost 2500 years ago, Aristotle presented a very similar framework as Toulmin's three-part framework of claim, evidence and warrant. Aristotle called this three part figure a syllogism based on signs. Signs are things so closely related that the presence or absence of one indicates the presence or absence of the other.

> Since Rosemary arrived on foot, she must not have a car.

In this syllogism based on signs, the missing premise is the statement, "Only a person without a car would walk on foot." This isn't a deductive syllogism, though. The claim may or may not be true depending on the warrant. Maybe Rosemary owns a car but likes to walk?

Summing it up

Being alert to recognize unstated premises or implied warrants is a valuable skill for reading critically. Teach yourself to ask, "Is there an unstated premise here?" or "Is this evidence warranted?". This skill can be helpful when you sense a weakness. You can quickly analyze the weakness in a specific claim by excavating its underlying assumptions. When that happens in a CARS passage, it's a good chance you will have anticipated a question, because the test-writer likely sensed the same weakness. The more you can make it manifest during the process of reading, the better off you'll be, but don't hold yourself to an impossible standard. Maintain flow, immersion, and engagement. You may not have spotted the enthymeme when you read the passage. That's only natural. But when the question comes later, you know what the test-writer is getting at, and the question will not be difficult.
Let's practice

Continue working through Step 2 and Step 3 of the CARS Diagnostic Tool. Pace yourself to complete the curriculum provided by this resource within the next three lessons.

CARS Lesson 12 - Focus and flow

Throughout these lessons, we have been getting stronger in the art of reading critically. There is the art of reading a passage closely. While you are reading a passage, you can already be answering the questions intuitively that the questions will ask you later. What claims are made by the author in their argument? Are the claims logically grounded or justified by evidence? What appeals does it make? What issues does the argument ignore or evade? How is it organized? During reading, a self-aware practice of attention management can make it possible to analyze the structure of passage while still being immersed and engaged in the author's expressive language. We are moving into the next phase of CARS preparation, devoted to practice and full lengths leading up to your exam. Let's get everything working together.

Make a clearing

The CARS section represents a kind of performance in time. It's good to think of reading a passage as if you were clearing a field. You are 'making a clearing', making the passage intelligible in every dimension - the plain reference, the expressive dimension, the reasoning, structure, and evidence. You do your best to exhaust the meaning. Taking the time you can afford, you bring everything you can in the passage to the light. When you move on to the questions, you'll not have found all the things in the passage that the question-writer will have seen. You do your best. The question-writer had a much longer time to spend with it, but you will know what they are up to in the questions. When you're in the zone, there is a sense of confident, engaged immersion.

Just like clearing a field, sometimes you hit a stump or come upon a dense tangle of thicket. Trust yourself. It's this way in all the sections. In a biology passage, for example, you will run into things you feel practically certain are beyond the scope of undergraduate level MCAT science, maybe a viral coat protein fusion used in a yeast three hybrid assay. You know what this is? It's great if you do, but AAMC wouldn't expect foreknowledge of something that advanced. Maybe you've never come across a viral coat protein used as a tool because of its specific affinity to an RNA sequence. Maybe you've never come across yeast three hybrid assay. Don't stress. It's guaranteed that nine out of ten people on the way to a 130+ in the biology section won't have comfortable foreknowledge of yeast three hybrid assay either. It's graduate level molecular biology. AAMC put it there to see if you can keep your footing. You hit a stump, so you make a fence around it. Turn it into an open question and clear as much as you can. Always reach an accommodation. You can see the rationale for the scientific assay from the context of the passage. The researchers are measuring protein-RNA interactions. That's the purpose of the assay. You have reached an accommodation with it. You have made what's left, what's still uncertain, into a good open question. That what AAMC is interested in seeing you can do. You keep moving. You're in the zone.

Clearing a passage is a little different in CARS. One difference is that the author of the passage is at least trying their best to communicate. The AAMC writer of the biology passage will stress

your comprehension on purpose, trying to produce a strain. The 3rd party author of the CARS passage won't do this on purpose. But it still happens. What difference does it make if it's not on purpose? Why does the intention of the author matter? *In a CARS passage, the author is always trying to communicate*. No matter who it is, never put the author of a CARS passage on Mount Olympus. They are a person. Imagine the author is right there with you, trying to communicate. If you get confused about something in a passage, ask them, 'What are you trying to say here?' Maybe you stumbled in the reading. Maybe they stumbled in the writing. Imagine how they respond to your question. Often it will come clear, and if it doesn't, then fence it in as an open question. Usually a well managed open question will find its answer later in the passage. What do you think they're trying to say right there? You're probably right. But maybe not. Manage it as an indeterminacy and it will often settle in a few sentences. Now matter what, always reach an accommodation. Never let anything push you out of the world of the passage. You are the one it was written for. You are always a local.

Movement and structure

As the great Swiss linguist, Ferdinand de Saussure, described it, speech possesses an on-line emergent temporality. It flows like a river. In a CARS passage, you start reading a paragraph at the top left. Words follow each other in a sequence. The author is speaking to you. Later on, you will have reached the bottom right of the paragraph, and you are at the end of the last sentence. The paragraph started at 'A' and now you are at 'B'. 'A' preceded 'B' in time. It's in the flow of the language that you find the expressive life of the writing. In reading with the flow of speech you connect to the author's point of view on a human level. That's the power of speech. We are hard-wired to understand it like a kind of telepathy.

Now that you have reached the end of the paragraph, you can see the whole thing. That's different. You can see 'A' and 'B' together. They are simultaneous now. You can see how the paragraph has a central claim the author supports with logical reasoning and evidence. The paragraph has a structure. It is an intentional composition. The paragraph is not only speech. It's also a piece of writing.

Additionally, looking at the paragraph after the one that came before it, you can see how the paragraph represents a transition. Maybe the author transitioned from a presentation of a counter-argument to return to directly supporting the main idea of the passage. Something is starting to take shape - your sense of the structure of the passage as a whole.

We are describing here two fundamental modes of attention to bring to reading critically. In one, your understanding follows along with the linear flow of speech. In the other, you see the paragraph, or the passage as a whole. You step back and see it as a simultaneous structure. We are learning how to be in the zone in a CARS passage. In the zone, you can comfortably shift your attentional focus between these two modes in a disciplined way without losing engagement, immersion, and pace. Practice this! It would be very difficult to learn this way of reading if these two modes of attention weren't already very natural. The difference is the disciplined self-awareness that you are doing it, and that it is happening in the context of a

timed performance. You are finding all the meaning. You are clearing the passage and getting to the questions.

The questions

In earlier lessons, we have discussed CARS questions from a variety of perspectives. We have also discussed the art of close, critical reading. You can understand how the question-writers see the passages. You can anticipate many of the questions. At this stage, as we enter the next phase of CARS practice, including full-length practice, a primary challenge is to remember not to forget what you know when the test starts pushing you around.

Any participant in a competitive sport knows how this can happen. You knew beforehand what you were supposed to do going into a tennis match. Serve into his body. Get to the net. It works in the first set, and you come close, losing in a tie-breaker. He's ranked above you. He's tough, but you're giving him a real match. However, halfway into the second set, you get frustrated. For some reason, you start trying to ace him, and instead of getting to the net, you stay back on the baseline slugging away. Before you even realize what's going wrong, the second set is over 6-1. You could have made a real match out of it, but you lost it in straight sets. No other way to put it. You forgot your plan under stress. Remember to remember your plan. <i>Practice remembering your plan.

It's easy for stress and mental fatigue to build during the MCAT. It's an intentional part of the test. An important part of becoming a good doctor is learning how to maintain good quality thought process even when you are stressed and fatigued. You are not superhuman. Rules and checklists help. When the going gets tough, don't let it throw you off your game. Let's summarize a few key things you don't want to forget when answering CARS questions.

Don't make the perfect the enemy of the good

Your score does not depend on a single question. A good score depends on comfortable, steady movement throughout the whole section.

Give yourself a half dozen get-out-of-jail-free cards

Imagine setting a hat in front of you when you start a section. If you feel you are getting stuck on a question, play a card into the hat. Flag the question. Choose the least worst answer, and move on. You can come back at the end of the section. If you don't have time to come back then, it turns out playing the get-out-of-jail-free card was an even better idea

Don't go fishing

Unless you're going back to the passage to find out or confirm something very specific; you have a good idea of its location; and you can get back out again quickly, don't go back to the passage. If you can avoid it, resist the temptation. People go on fishing expeditions to substitute

for thinking things through. It almost never helps the question, and it makes it harder to finish the section.

Always read the question stem carefully

Question stems challenge your focus, perception and mental discipline. There is almost always a wrong answer corresponding to a predictable misreading. Read the question stem as if it were a law trying to send you to jail.

Answer the question stem by itself

If there is enough to go on, try to answer the question stem in your mind as if it were a short answer question before reading the answer choices. Pause a moment to think independently about the question stem. Don't let the test-writer's first wrong answer do the thinking for you.

Don't commit too soon

Give all four answers their chance to speak. Don't make the first good sounding answer the king of the hill.

Let a question be easy when it wants to be easy

It goes without saying that the MCAT is a competitive, difficult exam, but if you've prepared reasonably well, for half of the questions on this exam, in all sections, the biggest challenge will be to believe the question is as easy as it looks. You don't rush. You keep your discipline. You read carefully. You look at all the answer choices, but if you've taken these steps, then let yourself believe it's an easy question.

Sometimes you just have to choose the least worst

In looking for the best answer for a difficult, subtle question, sometimes you find yourself stuck between two choices, and they both look pretty good. Now you go on the attack. One of them has an aspect, intentional on the part of the question-writer, that makes it unsound. Imagine you were the question-writer. Find the weakness. The other one will be impervious to attack. You may not love it, but it's the least worst. That's the one.

Keeping your calm

Studies have demonstrated complicated interactions between circulating glucocorticoid levels and performance in cognitive and memory tasks. These mechanisms are proposed to explain some of Yerkes' and Dodson's observation that for a difficult, complex task such as the CARS section, the optimal performance for an individual will be facilitated by a a moderate-low arousal state. From personal experience, everyone knows that attentional focus is different under sympathetic versus parasympathetic control. During the MCAT, stress threatens to

overstimulate the sympathetic pathways. The experience of the test-center is novel. Things are somewhat unpredictable. You don't control what passages are in the exam. As they say in the field of psychology, there is a powerful social evaluative threat. We build this thing up too much.

Cultivate a mindset that is calm and engaged for the test and teach yourself how to nurture this mindset through controlled breathing, muscle relaxation and mindfulness even when the exam is at its most challenging. Simply deciding to calm down doesn't work very well for most people. With biofeedback, however, you can move your autonomic nervous system into a parasympathetic response. When you are breathing steadily and all your muscles are relaxed, everything is fine. Your brain is always looking for cues as to which state it should be promoting. Consciously provide the autonomic centers with parasympathatic responses and they become self-reinforcing. That's biofeedback.

Restructuring your cognitions only goes so far. Use biofeedback. When you get to the test-center, clear your mind and perform what's known as a body-scan meditation. Close your eyes. Start from the very top of your head and visit each part of your body mentally. Tense and then relax muscle groups. Go all the way from your head to your feet and then back up again. Take your time. Set your calm at the beginning of the exam and then nurture this state throughout the test.

Reset every 30 minutes

Reset yourself periodically. In earlier lessons, we talked about "plan A" for time management, the thirty minute unit of flow. For thirty minutes the exam tries to beat you up. Then you come up for air and check your pace, close your eyes and meditate for full thirty seconds. You will get the time back after you start back on the next passages. You will get even more back than the thirty seconds you spent, because it will be like you gained five IQ points. Clear your mind and imagine you are somewhere beautiful. There's a cool breeze. Relax all of your muscles and breathe in deeply. Start at your head go down to your feet. Relax each muscle. Encourage the parasympathetic response. Everything is fine. Completely relax, and then start back into the test.

After a hard passage

It's a very common pattern to see in practice tests. The person is moving along well, on their way to a 130 for the first four passages. Then AAMC takes it up a notch in number five and beats them up a bit. The passage is so dense and difficult they don't even notice that three of the five questions are actually easy. What you have here are three easy questions and two hard questions following a hard passage, but that's not how it feels, so the feeling of dread comes on. They think they're missing questions and the MCAT just stopped being fun. The real problem isn't passage five. The problem is what happens in passage number six because now they are off balance and upset. They start passage six, but they're still thinking about five. The pulse is elevated, and the breathing is shallow. It's like that all the way until the end of the

section, and they land at 126 when they were capable of 129 or 130. This is how the MCAT can grab you by the back collar and push you out into the alley like a bouncer giving a bar patron the bum-rush

In an earlier lesson, we talked about how it can be for a professional golfer. It happens to the best of them. She hooks the ball into the sandtrap and then overshoots the green. That didn't go so well. A double bogie! That's not good. Now, though, she has the opportunity to use the walk to the next hole to clear her head. She knows her game is good. She uses that walk to the next hole to calm her breathing and meditate. When she arrives at the next hole, she will see the fairway clearly. If a passage on the exam beats you up, don't rush headlong into the next one. That's how the exam rolls you. Close your eyes and breathe deeply for a few seconds. Do a four-four-four breath. Breathe in deeply for four seconds. Totally relax and hold it for four seconds. Breathe out slowly for four seconds. Regain your balance. You'll get that time back. Close your eyes and totally relax. Then start the next passage, and you will see it clearly. This is hard to remember to do, but it's so important.

Let's practice

Continue working through Step 2 and Step 3 of the CARS Diagnostic Tool.