

Designing a research question

There are several steps to take in designing a research question:

1. Finding a topic
2. Researching the topic and finding a theme
3. Narrowing down
4. Turning your narrow sub-topic into a question
5. Testing and refining your question

1. Finding a topic

The first step before arriving at a good research question is to think about a **general topic area**. It should be an area that is interesting to you and anyone likely to assess your research proposal.

To do this, it's helpful to think in terms of **“hot”**, **“luke-warm”** and **“cold”** topics (Davies, 2022).

- **Hot topics** are at the cutting edge of research. Hundreds, if not thousands, of publications are produced daily around the world in these areas—media articles too. Research grants are widely available. Examples include the COVID-19 pandemic and vaccine development, cancer research, the impact of climate change on weather patterns, ‘green’ energy, driverless cars, carbon capture and storage, etc.
- **Luke-warm topics**: These are topical but less “hot”. They might be regularly discussed in the scholarly literature, but not daily. *The impact of deforestation on the habitat of fruit bats* is an example. It's important (especially to ecologists) but not cutting-edge.
- **Cold topics** might have been important decades ago, but they are barely mentioned in scholarship presently, and don't feature in the media. *The Marxist revolution in Cuba* or *St Anselm's third version of the ontological argument for God's existence* are examples. There's nothing wrong with cold topics, but they appeal to narrow sectional interest groups.

“Hot topics” are great as they will ensure your research has currency and will potentially lead to spin-off research projects and possible future funding. However, topics don't remain “hot”—what is “hot” now might be cold or luke-warm by the time you have finished. Another disadvantage is the vast quantity of publications you will have to keep abreast of daily. You may also have difficulty in finding a good research question as other researchers may have ‘beaten you to it’, or the question may have been ‘done to death’. With many scholars around the world working on them, “hot” topics can also be a problem if by the time you have finished your thesis, others have made the same original contribution that you intended to make.

“Luke-warm” topics have a reduced range of scholarly papers being published regularly so it is easier to become familiar, and possibly to cultivate expertise, in the area. Something “warm” can later become “hot” too, and if you choose wisely, you might be at the vanguard of a promising and developing new area later. This is obviously a good thing.

“Cold topics” have been debated and discussed for decades (if not centuries). Interest in these areas has lapsed for all except specialists in the field. There is little recent research on these areas, and in pursuing them your work will lack currency. It is not unknown for a “cold” topic to re-emerge as a warm topic, however (e.g., the 18th century Gallian idea of faculty psychology re-emerged into modularity of brain functions in late-20th Century cognitive science), but you'd need to be confident you were onto something that had the potential to be of contemporary interest to other scholars.

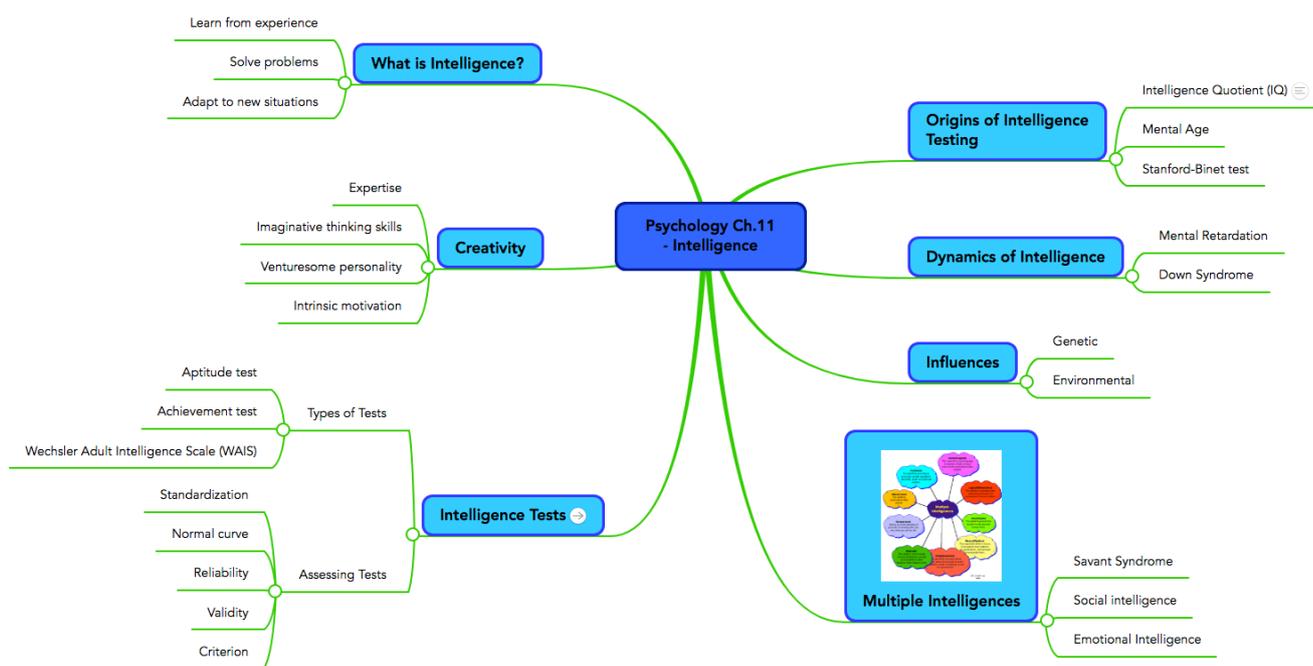


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In general, luke-warm topics are more reliable, but hot topics are good—with reservations. Find one, then move to step 2.

2. Researching the topic and finding a theme

Spend several weeks reading in your topic area. Read periodical articles as well as scholarly books, and book chapters. You will start to notice regular themes emerging. These are sub-topics within the main topic area. You may like to do a mind map of these themes. Here is a mind map on intelligence in the discipline of psychology:



A mind map on the area of intelligence (Cougles, 2012)

Now try to choose a sub-topic or theme within your chosen research area. Let your **emotional reaction** to these themes guide you here. *Which arouses your intellectual passions? Which theme has been a topic of discussion with other colleagues? Which one do you read most about—because it sparks something in you?*

Alternatively, your choice might be guided by a **problem area**. This is an area of scholarship where the literature exposes a persistent research problem. An example might be the *increasing rates of autism in children and the causes of this*. Statistics show that this condition is on the rise, and there is no satisfactory explanation for it.

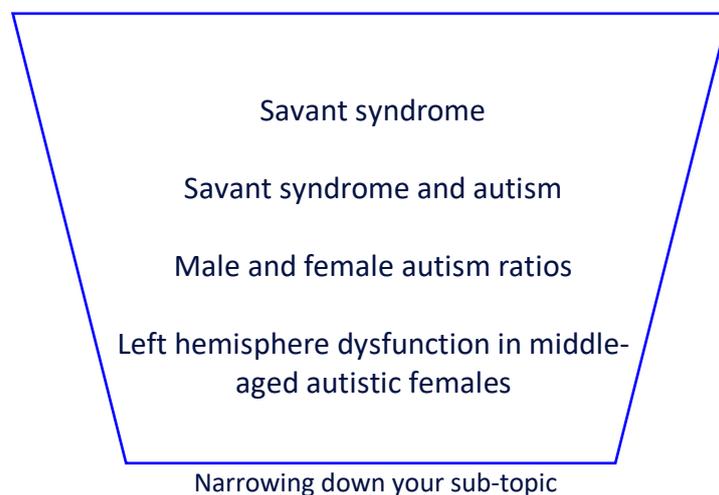
Whether you rely on your **emotional response** to a topic, or are guided by a **research problem**, remember that if you are doing a PhD, you will be working on the topic for many years. It should be something that *fascinates* you. You might decide, for example that 'savant syndrome' is your narrow field of interest. From this, you move to the third stage.



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3. Narrowing down

Now that you have found a sub-area or theme within a topic of interest, you need to narrow down further. It is insufficient to construct a research question such as *What is savant syndrome?* That is far too broad. To develop a more refined question, you need to read more about the specific area and narrow down the sub-topic ever further. It must be as **narrow** and **specialised** as possible without losing your interest. For example:



This step is essential for developing a **research question**, which is the next step.

4. Turning your narrow sub-topic into a question

The task now is to create a question that will simultaneously be broad enough to allow for sustained scholarship in the area, and yet not so wide as to lead to spill-over into adjacent related areas. If there is spill-over, the focus of your question can become unclear. You do not want research other types of savant syndrome, or other brain dysfunctions as it would result in a loss of focus. Avoiding this problem means refining and testing your question.

Open, not closed

The question should also be “open”, not “closed”, i.e., not lead to a superficial ‘yes/no’ response. It should open opportunities for debate and reflection. For example:

- *Is there left hemisphere dysfunction in middle-aged autistic females?*

is a closed question. The more detailed question:

- *Is there statistically significant rates of left hemisphere dysfunction in middle-aged autistic females and does this correlate with evidence of savant syndrome?*

is a better question, but it is still closed - it fosters ‘yes/no’ answers. But things might not be so subtle; it may be a matter of balance: In some cases, there might be a statistically significant rate, but in other circumstances not. By asking a closed question you are effectively *shutting down the debate*.

Getting the right question-starter

Asking questions in such a way already limits the range of the study and closes opportunities for analysis. Instead, use an “open” question that uses question-starters like:

- *How... Why ... Is... and To what extent....*



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For example:

- *To what extent do statistically significant rates of left hemisphere disfunction occur in middle-aged autistic females and does this correlate with evidence of savant syndrome?*

This opens the issue up to discussion and debate. How it is answered becomes a matter of *degree*.

To take another example:

- *Should the constitution be changed so that the President of the US can serve more than two terms?*

That's a closed question. A subtler question might be:

- *To what extent is there merit in amending the US constitution to admit of changes to presidential term limits?*

Which question is likely to lead to fruitful discussion and debate? Clearly, it is the “open” question.

Here are some alternative question types and research question formulations to consider.

RESEARCH AIMS	RESEARCH QUESTION FORMULATIONS
Describing and exploring	What are the characteristics of X? How has X changed over time? What are the main factors in X? How does X experience Y? How has X dealt with Y?
Explaining and testing	What is the relationship between X and Y? What is the role of X in Y? What is the impact of X on Y? How does X influence Y? What are the causes of X?
Evaluating and acting	What are the advantages and disadvantages of X? How effective is X? How can X be achieved? What are the most effective strategies to improve X? How can X be used in Y?

Alternative question forms (McCombes, 2021)

5. Testing and refining your question

Testing and refining: You should not rest with your first iteration of a question, however. It needs to be assessed by scholars in your field of study who know the area. This is where your colleagues come in. Shop your question around with your colleagues in seminars and get their opinion.

- Is the question clear?
- Is it interesting?
- Is it sufficiently focussed?
- Is it complex and subtle enough?
- Is it *researchable*? (Can research be done on the topic?)
- Is there likely to be sufficient, current literature in the area? (Insufficient literature might mean a “cold” topic; too much literature might mean the field is overdone.)

You are now in the position to begin your deep dive into the literature and to start on **your Literature Review**.



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References and further reading

- Cogle, B. (2012). *Psychology, Chapter 11. Intelligence*. <https://www.mindmeister.com/80682022/psychology-ch-11-intelligence>
- Davies, M. (2022). *Study skills for international postgraduates*. Bloomsbury.
- McCombes, S. (2021). *Developing strong research questions. Criteria and examples*. <https://www.scribbr.com/research-process/research-questions/>

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