Becoming a Resilient Scientist
SERIES

Workbook II:
Exploring Our Self-Talk:
Understanding Cognitive Distortions & Imposter Fears

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This workbook is intended to accompany Becoming A Resilient Scientist Series
Unit 2: Understanding Cognitive Distortions & Imposter Fears

It is most effective when it is used after attending/watching the workshop lecture. The exercises in this workbook are to help you process and solidify what you've learned in the lecture and to provide you with additional resources. Although it is encouraged that you complete the exercises, it is not required.
WE ARE ALL STORY-TELLERS

· What are some of the stories you generally tell about yourself?

What are some of the stories scientists generally tell about science?

Are these stories helpful or unhelpful?

Are these stories accurate or inaccurate?
To become resilient, we have to understand our **distorted self-talk**.

Our **thoughts** impact our feelings, and thus **affect our behavioral reactions**.¹

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1. [https://beckinstitute.org/cognitive-model/](https://beckinstitute.org/cognitive-model/)
Often, when we are stressed, our perceptions become distorted and dysfunctional.

Adversity and false stories we tell ourselves can lead to a change in our beliefs. Our beliefs may cause us to suffer from negative behavioral consequences.

But if we learn to dispute the falsehoods we tell ourselves, we can learn to combat adversity, and benefit from a positive change in our consequential behavior.
## Types of Cognitive Distortions

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<tr>
<th>Cognitive Distortion</th>
<th>Description</th>
<th>Example</th>
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<tbody>
<tr>
<td>All-or-Nothing Thinking</td>
<td>Your performance is either <strong>perfect</strong> or it is a <strong>complete failure</strong></td>
<td>Your lab meeting presentation went well; however, you stumbled on a question. Therefore, you view the lab meeting presentation as a failure.</td>
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<td>Catastrophizing</td>
<td>You <strong>exaggerate</strong> the implications of a set-back or mistake.</td>
<td>You forget to put your samples into the freezer and have to throw them away the next day. Therefore, your PI will never write you a recommendation letter and you will never get into grad school.</td>
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<td>Minimizing (Discounting the Positive)</td>
<td>You <strong>downplay</strong> the importance of your accomplishments, positive qualities, or positive experiences.</td>
<td>Your PI congratulates you on receiving a travel award to go to a conference. You tell her everyone probably got one.</td>
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<td>Jumping to Conclusions (Mind-Reading/Fortune-Telling)</td>
<td>You <strong>make assumptions</strong> about what someone else is thinking or you <strong>anticipate</strong> that things will <strong>turn out badly</strong>, <strong>convince yourself</strong> that they will, and <strong>act accordingly</strong>.</td>
<td>Your PI is grumpy and ignoring you today; you assume it’s due to you taking so long yesterday to set up your experiment and buffers. You’re sure you won’t get the scholarship your mentor suggests you apply for, so you don’t work very hard on the application.</td>
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<td>Emotional Reasoning</td>
<td>You <strong>assume</strong> that your emotions reflect reality, and <strong>reason or draw</strong> conclusions from <strong>how you feel</strong>.</td>
<td>You made a terrible mistake today and feel stupid; You then tell yourself (and others) “I am an idiot”. You feel like you don’t belong and tell yourself “I don’t belong”.</td>
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<tr>
<td>COGNITIVE DISTORTION</td>
<td>DESCRIPTION</td>
<td>EXAMPLE</td>
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<td>Overgeneralization</td>
<td>You view a single negative event as a predictable pattern for the future.</td>
<td>Because you struggled on your first journal club presentation you assume you will always struggle in journal club. You also assume you will not do well in other areas of your internship.</td>
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<td>Personalization</td>
<td>You blame yourself for something you are not entirely (or at all) responsible for.</td>
<td>Your supervisor gives you brief instructions on how to analyze data for a morning meeting. He forgets to point out one critical step, and you don’t analyze the data correctly. You take all the blame for what happened and feel bad about yourself.</td>
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<td>Should Statements</td>
<td>You criticize yourself using rigid fixed language that does not accurately reflect the nuances of a situation. (Should, must, ought)</td>
<td>You tell yourself “I am a grad student, so I should know how to read a paper; or I am a postdoc, so I ought to be able to figure this technique out on my own. This only serves to make you feel bad about yourself.</td>
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<td>Mental Filter</td>
<td>You pick out a single negative detail and dwell on it.</td>
<td>You enjoy your research and get along with your lab group, but you had a poor interaction with your mentor. When you think or talk about your time in the lab, you focus on this one negative experience, ignoring all of your positive experiences.</td>
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<td>Labeling</td>
<td>Form of generalization: Assigning a person’s action to their disposition rather than looking the situation.</td>
<td>When your lab mate snaps at you, you tell yourself it is because he is a jerk rather than realizing that he was in a hurry and possibly under stress.</td>
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</table>
What stories are you telling yourself?

When you are having automatic negative thoughts, write them down.
Write whatever comes to mind, try not to filter.

Look back and see what you wrote. What stories are you telling yourself?

Identify the cognitive distortions in your negative thoughts.
EXPLORING IMPOSTER FEARS

Similar to cognitive distortions, imposter fears (also called imposter syndrome or imposter phenomenon) lead to a feeling that you don’t belong and make you feel like:

- You are a fraud
- Your success is due to luck, which leads you to discount your achievements
- You have to work hard on tasks that are easy for everyone else

In what situations do you experience imposter fears? How does that fear hold you back or undermine you?
Google **accomplished individuals** and try to find those who also suffer from **experiencing imposter fears**. List some individuals who surprised you when acknowledging their imposter fears. Explain why it was surprising to you. Then remind yourself that **you are not alone**! *(We started the list for you!)*

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<th>Individual</th>
<th>Why it's surprising</th>
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<td>Maya Angelou</td>
<td><strong>Poet, novelist, and civil rights activist.</strong> She was awarded <strong>National Medal of Arts</strong> and the <strong>Presidential Medal of Freedom.</strong> She once said, &quot;I have written 11 books, but each time I think, 'Uh-oh, they're going to find out now. I've run a game on everybody, and they're going to find me out.'&quot;</td>
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<td>Serena Williams</td>
<td>Serena is the former <strong>number one</strong> tennis player in the world.</td>
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<td>Howard Schultz</td>
<td>Schultz was the <strong>CEO</strong> of the largest coffee-house chain the world (Starbucks) and is estimated to be worth $4.3 billion dollars.</td>
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DEALING WITH COGNITIVE DISTORTIONS & IMPOSTER FEARS

REMEMBER HATS

H – Hear your negative self-talk

A – Appreciate that you have a choice

T – Talk to yourself compassionately

S – Seek help and access resources
H – Hear your negative self-talk

Write down your negative thoughts and identify the distortions so you can work on tackling it *(You practiced this on page 5).*

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A – Appreciate that you have a choice and fact-check it

Think of this as a pros/cons list. Create two columns, support and against, and list your evidence for the thoughts you are having *(You forgot to put your sample in the freezer. Can you redo the experiment? Can the experiment still be successful?)*.

The event and type of negative self-talk or distortion:

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<th>Evidence in support</th>
<th>Evidence against</th>
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*(continued on next page)*
T – Talk back like a realistic giraffe

Instead of harsh self-talk, talk to yourself in a compassionate way as you would talk to a friend (How would you talk to your friend who forgot to put their sample in the freezer? What would you say to a friend when they are down and engaged in cognitive distortion?).

What you would say to your friend:

Now give yourself the same kind of compassion. What can you tell yourself now?

S – Seek help and access resources

Look for resources on your campus that can help

Resources available on my campus:

Seek help and find a therapist: https://www.psychologytoday.com/us/therapists
With our **emotions**, our goal is:

- **Awareness**
- **Interpretation** (accurate)
- **Regulation**

This is especially relevant for difficult emotions such as:

- Discomfort
- Frustration
- Disappointment
- Anger
- Disconnect (imposter fears)

*Remember: Discomfort is not a 'stop' signal – it is a 'pause and consider' signal*
When it comes to our **feelings**, our goal is to:

- **R** – Recognize them
- **A** – Acknowledge them
- **B** – Breathe deeply
- **B** – Be with them, don't suppress them
- **I** – Interpret them accurately
- **T** – Take action (or know when not to)
- **S** – Seek support and guidance when needed

*Note: this is the equivalent of HATS for distorted self-talk*
ACKNOWLEDGING OUR COGNITIVE DISTORTIONS

What distortions drive the stories you tell yourself – at school and at home? Are you more of a jackal, a giraffe, or an ostrich?

Why do you think that is, and what shifts would you like to explore for yourself?

What will you do moving forward to change your unhelpful self-talk?
HELPFUL PUBLICATIONS & WEBSITES

Cognitive Distortions

Cognitive Distortions/Thinking Errors Game
https://ddlamm.itch.io/thinking-errors

Imposter syndrome

How to deal with imposter syndrome

Are you suffering from imposter syndrome?

Feel like a fraud?
https://www.apa.org/gradpsych/2013/11/fraud

Growth Mindset

When it matters and how to know if it matters or not:
https://www.mindsetkit.org/