

Anatomy of a Thesis Proposal

What is the purpose of your Thesis Proposal?

The Purpose of any presentation is to convince Someone to do something.

Whom are you trying to convince, and what are you trying to convince them to do?

- Therefore build flexibility explicitly into your plans

Goals of your Thesis Proposal

Convince the **faculty** to:

- Agree that if you do what you say you'll do, they will **give you a degree.**
- Agree that as long as you are doing what you say you'll be doing, they'll **stay off your back.**

Convince **everybody in the Community** to:

- **Help you improve your perspective** about your past and future work.

Therefore build flexibility explicitly into your plans.

What is a Reasonable Research Plan?

The “Main Line”

Start: A Cute Problem

Your work to get an idea
And show a result

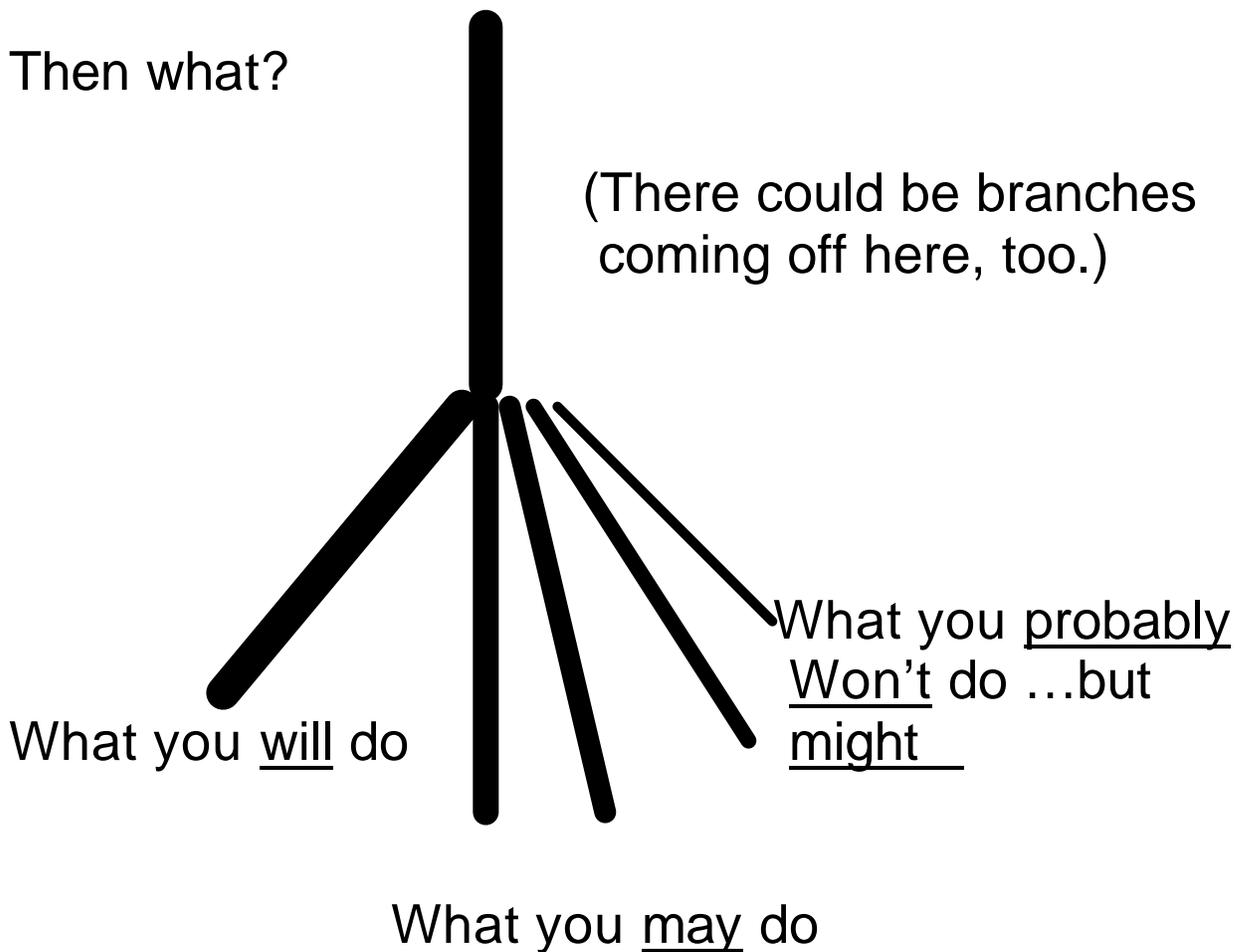
The First Serious Stopping
point, which serves as a basis
for various possible further
directions

The obvious thing to do next,
That you are pretty sure will
work

What you will do

* This generic plan is suitable for the run-of-the-mill thesis plans. However plans may vary slightly or dramatically from this outline.

What is a Reasonable Research Plan?



Remember your advisor can't tell exactly what he or she will be doing one or two years down the road... so why should you be able to? No one expects it of you.

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What is a Reasonable Research Plan?

When do you
Give your thesis
Proposal?

What have you done

You are somewhere in here

What you will do

What you
probably won't
Do.... But might

What you may do

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What Will You Do To Complete Your Thesis?

Do something not completely wasteful

Fool around with promising ideas

Get one result

How much you can
Think of to write:
8-12 pages

Get some more results

20-30 pages

50-80 pages

Change directions

100-250 pages

Write your thesis 2-6 months: less if u've been
Publishing as you go along:
More if u haven't

Get your thesis committee to read the draft
Congratulations(You Hope.)

What's In A Thesis Proposal Document?

Abstract

Introduction

Previous Work

Your New Approach

Your Results so Far

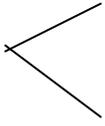
Proposed Research: What you will do,
May do, and might do

Schedule

Significance

Bibliography

These can
be switched
around



How Long Is Each Part of the Document?

<u>Short Form</u>	<u>Long Form</u>	
		Abstract
1 Page	1	Introduction
1-2	2-4	Previous Work
		Your New Approach
2	10-15	Your Results so Far
3-4	3-6	Proposed Research: What you Will do, May do, and Might do
½	½	Schedule
½	½	Significance
½	1-2	Bibliography
<hr/>	<hr/>	
8-10	20-30	

Actual numbers may vary!

Writing an Introduction

The opening paragraph is stylized! You have to stake out your territory and make it sound important!

The Steve Shafer Handy-Dandy Universal Method for Writing Dynamic Introductions:

“Set'em up and knock'em down!”

Part One: The Set-up

In order to function effectively, a mobile robot must know where it is, what is around it, and what is happening in the environment.

Generic Form: The world would be a wonderful place if all my dreams came true.

Part Two: The Problem

Unfortunately, robot perception with conventional computers has proven inadequate to meet these needs. Even insects have better vision than robots.

Generic Form: Too bad for you, you can 't have it!

Part Three: The Rescue¹ (My hero! Oh, my Hero!)

Therefore I propose to harness one billion caterpillars to drag the Navlab through Schenley Park.

Generic Form: Lucky I came along with my new idea!

How to Describe Proposed Research

Each possible direction for your work must be described by answering several questions:

What is the nature of the problem—
What do you wish to do and why is it so difficult?

What is your bright idea for solving it or building it or investigating that area?

What kinds of things do you have to do to carry out this type of work?

What will you end up with – a theory, a program,
A robot nose-hair plucker?

Why should anyone besides you think this is a good thing to have?

If you take a paragraph for each question, this will give one page for research area.

That's all you need!

The Final Trimmings for a Thesis Proposal

Schedule: ½ page

Total time from now to graduation:
Probably 1 ½ to 2 years

Each term in your schedule should be 3 to 8 months
Long

Significance: ½ Page

List 3 to 6 things that will result from your proposed research: a program, a theory, and a demonstration, whatever

Each should appeal to different audience: robot vision researchers, all mobile robot researchers, and all robot researchers, people who train caterpillars, whatever

A Short paragraph for each – that's the nominal ½ page

So, now you've given us your plan
To save the world...

And become respectable in the process!

Proud of yourself?

You should be!

Now **GET BACK TO WORK!**