1. **Constructing an Argument.**

**Step 1:**

I want to explain the past development of a present phenomenon (i.e. housing in the United States), the present state of a phenomenon, or I want to make a prediction about the future state of a phenomenon.

I may have a hypothesis (which can be stated in the form of a thesis) about why the phenomenon came to be the way it is (cause and effect), about its present state (description of facts)), or about its future development (cause and effect).

I offer an argument explaining why that phenomenon came to be the way it is (causes and effects), explaining or describing its present state (elaborating the facts), or explaining the way it might turn out to be (causes and effects).

**Step 2:**

If I want to test my thesis about the way a phenomenon came to be the way it is (i.e.: why, in my observations, is housing in the United States mainly centered on suburban, car-centered, single-family housing?), I will need to do research. I will need to gather information.

This information (the facts) will be important in justifying my propositions, my reasons, and my conclusions about how a phenomenon came to be.

My reasons will be made up of chains of propositions.

I need to justify my argument (the chain of propositions), I need to use sounds reasoning: I need to reference solid sources of information and link my arguments in a logical fashion.

1. **Types of Propositions**
2. Truth
   1. Propositions about states of affairs (i.e. facts about the world)
   2. They are fallible and always open for revision if new evidence arises.
3. Rightness
   1. Propositions about what it is right to do or not to do (based on ethical or moral or normative codes).
      1. Ethics: guide for action that is usually based on a cultural framework of belief (for instance, religious orientation).
      2. Moral: a categorical guide for action usually derived from reasonable conclusions about what is right or wrong.
      3. Norms: laws and social codes that regulate action and interaction.
4. Truthfulness
   1. Propositions about beliefs, intentions, etc.
   2. They can only be proven over time. (i.e., if you state that you are committed to human rights, your record can be judged over time based on your actions).
5. **Logic and Reasoning. (Stringing propositions together to form conclusions)**

**Deductive Reasoning:**

1. Premise: All human beings are mortal.
2. Premise: You are a human being
3. Conclusion: You are mortal

A pretty certain conclusion: in our experience, humans are mortal (an existential condition). Hence, if I am a human being, I can conclude that I, too, will one day die.

**Inductive Reasoning: (seeks to determine general rules from observations)**

1. Generalization (premise about a sample): 60% of people surveyed in Virginia prefer red cars.
2. Jules lives in Virginia.
3. Conclusion: There is a 60% change that Jules prefers red cars.
4. (The general rule upon which induction is based in this example is a statistical rule: given a large enough sample size, one can make a general induction about a given population).

Not a certain conclusion: the sample might not have been representative of the population, there might have been errors in terms of the way questions were posed, etc.

**Abductive Reasoning: (looks for cause and effect relationships from observations)**

1. Robert laughs at my joke.
2. When people laugh at my joke, they think it is funny.
3. Conclusion: Robert thinks my joke is funny.

Not a certain conclusion: Robert might think my joke is lame, and he is laughing at me, not at my joke.

**If… then… reasoning.**

Example: If it is 1 pm, then the mail has not yet arrived.

This if… then… relies on a general assumption based on experience.

1. Experience: the mail never (or almost never) arrives by 1 pm.
2. Assumption: it is 1 pm, then the mail has not arrived.
3. This is inductive logic at work: in our experience, the mail almost never arrives by 1 pm, hence, if it is currently 1 pm, there is a good chance the mail has yet to arrive.
4. **Logic and Types of Propositions**

**Deductive Reasoning**

1. Human beings have free will (proposition about truth, about a state of affairs; a premise that presents itself as a fact, not an observation).
2. Humans have a right to determine their lives in accordance with their will. (proposition about rightness, based on previous proposition).
3. My freedom ends where it blocks or impedes your freedom. (proposition about rightness: a general moral claim).

* There is no absolute freedom, since the absolute exercise of my free will would entail overriding the exercise of your free will.

1. Conclusion 1: Our free will must be bound to norms that regulate our interactions.
2. Conclusion 2: These norms must ensure universal freedom, or the maximum amount of freedom.
3. **Example of an argument**

**Syllogism one: deductive reasoning**

1. Premise: Climate change is an existential threat for humanity. (Evidence?)
   1. Sub-premise (**Inductive**)
      1. Climate models show that if the temperature increases 2 degrees Celsius, there is a 99% chance that feedback effects will be set off that are irreversible, and will cause damage to ecosystems, rise in sea levels, draught in certain areas, lower crop yields, etc.
      2. We can induce that climate change is an existential threat.
2. Premise: Climate change is caused by human actions. (Evidence?)
3. Conclusion: We need to change our actions in order to fight climate change.

Ambiguity: What actions caused climate change? What actions need to be changed?

**Syllogism two: deductive reasoning**

1. Premise: Climate change is an existential threat for humanity
2. Premise: Climate change is caused by human actions.
   1. Sub-Premise: Climate change is caused by growth driven modernization and its side-products: industrialization, exploitation of natural resources, pollution and destruction of ecosystems, etc. (Evidence?)
3. Conclusion: We must reconfigure our production and consumption models in order to fight climate change. We must make production and consumption models sustainable.

Ambiguity: What is at the base of our production and consumption models? What logics, institutions, technologies, and norms drive them? Why aren’t they sustainable? How could they be sustainable?

**Syllogism three: deductive reasoning**

1. Premise: Climate change is caused by growth-driven modernization.
2. Premise: Growth-driven modernization is driven by the logic of markets.
3. Premise: Markets make growth their imperative. The logic of capitalist markets is perpetual growth.
4. Sub-clause: Premise: The logic of markets is not compatible with the logic of ecosystems.
   * 1. The planet has limited resources.
     2. The planet has ecological limit points (carbon dioxide in the air)
     3. The logic of markets, perpetual growth, is blind to these ecological limit points.
     4. Conclusion: The logic of markets is not compatible with the logic of ecosystems.
5. Conclusion: We need to reconfigure or regulate markets in order to create production and consumption models that are sustainable and not driven by perpetual growth. In order to do this, we will have to create production and consumption models that are not based primarily on the logic of the market.

But this conclusion opens up a whole set of other arguments (it opens up a can of worms). How to regulate markets? How to square democratic forms with regulation of markets? Etc.