

# **Political and Industrial Revolution in Bug's Life**

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*A Bug's Life* is a fun little movie that can nevertheless be taken *way* too seriously and thereby used as a basis for discussion and analysis for a beginning Economics or Government class. Below is a discussion of the film in such a way as to get teachers and students to begin to consider the film in a new light, followed by a series of questions for Economics and Government teachers to use with the film.

While presenting the film, I recommend three days for the showing, so that it can be paused in class and time for discussion of key points can be inserted. I prefer showing the DVD version of the film, as that allows easy scene access and doesn't require rewinding.

## **Synopsis and Discussion of the Film in a Very Serious Way**

In the Disney/Pixar film, *A Bug's Life*, a society's transformation from traditional agricultural monarchy to an industrialized pre-modern state is explored. Although on the surface it appears to be a simple children's tale, simply told, it is in fact a powerful allegory, replete with detail, on the scope and scale of Orwell's *Animal Farm* in terms of what lessons it offers students of both Economics and Government. For, in the film, if we buy into the forced smiles and scenery-chewing overacting, we see a traditional good guys vs. bad guys pantomime. But beneath the veneer of what is intended for public consumption, a vastly more complex world of grey lurks beneath the black-and-white surface.

The film opens on the state of the Ants, also known as Ant Island. The Ants are preoccupied with traditional agricultural labor, filling economic roles based on ancient societal rules and not following any particular market dictate. While a potential for capital investment or production of consumer goods exists on the island, the Ants, trapped in their introspective system, focus all their production on growing and gathering food. While their ancestors obviously built massive structures in the past of both functional - the anthill - and ritual - the offering stone - usage, the current dynasty is clearly not capable of such monumental feats. Clearly, the best the traditional monarchy can provide its subjects is a hardscrabble existence with perhaps a promise of a better afterlife to come to justify their meagre lives of suffering and toil.

While we view the preparations for Princess Ada to eventually assume the Queenship of the Ants, we see an interesting episode: Princess Dot, not in consideration for direct ascension to the throne, displays both independence and hostility toward Ada. While small, Dot is not to be underestimated. Her hostility towards Ada is clearly born of a rejection of traditional values, much like the Scar-Mufasa conflict evident in *The Lion King*, and Dot is quite plainly an ideal candidate for a revisionist political movement. But will she seek a right-wing *coup d'etat* or a left-wing proletarian revolution? We do not know yet, but she is clearly possessed of the motive necessary to initiate palace intrigues.

Next we see Flick. Flick, like Dot, rejects traditionalism, but his rejection is not based on privation of any expected privilege, as in Dot's case, but in a genuine desire to improve the lot of the island. He is like the unchained cave dweller in Plato's allegory of the cave, one who has seen the light and wishes to share his vision of a more productive future with his fellows. Of course, Plato theorized that such a visionary would not be accepted by general society, and we see Flick's ideas rejected out of hand by the ruling class of Ant Island. Dot, however, gravitates to Flick and expresses admiration for his work. Dot seeks a change in the system, and any change that happens can serve to open up the possibility of further change. Should Dot manage to play her cards right, such changes will be to her great advantage.

Now we see Flick's invention destroy the Offering Stone and annihilate the food gathered. This event is

unprecedented, and Dot has her moment of opportunity.

When the Grasshoppers arrive, they are furious with the ants for what is definitely a lack of payment, and quite possibly a deliberate act of rebellion. They do not seek an explanation, only a rapid resolution and restoration of the *status quo ante*.

While the Queen holds titular rule over the Ants, her role is ceremonial. Real power on Ant Island is wielded by the absentee landlords, the Grasshoppers. Perhaps some deal was struck in the past along the lines of the Magna Carta between the Grasshoppers and the Ant monarch, as she is clearly unable and unwilling to even muster a small force of bodyguards to secure her person or those of the royal family, let alone oppose the challenge to her authority the Grasshoppers present. The Grasshoppers insist strongly that they be paid their due, or they will threaten dire consequences for breach of contract.

The Grasshoppers' contract with the Ants is one that modern students might recoil at, but to the traditionalist Ants, it seems to fit with their place in life. Although it is exploitative and cruelly so, the Ants accept their social role with a fatalistic outlook and resolve, like the horse in *Animal Farm*, that they must work harder.

But what to do with Flick? The Ant royalty convenes a hearing to sentence Flick for the disaster that is clearly his responsibility. While he would pay with his life as a commoner who devastated the kingdom in almost any other society, the Ants choose instead banishment, perhaps because of an ancient tabu on killing relatives. But it is decided to send Flick away, presumably to come back, but with the unstated hope that he perish in the wilds, giving the Ants their capital punishment without the blood-guilt. Such schemes existed in ancient Greece, so it is not entirely implausible for them to be part of the Ants' *weltanschauung*.

Flick departs on his fool's errand, amid speculation of his imminent demise. One voice declares confidence in Flick: Dot's. Dot seals her alliance with the forces of change Flick stands to offer, but not so much so that she commits fully to his quest. Should he fail, there will be other opportunities. Should he succeed, he'll remember Dot as his supporter and be more willing to bend to her will - Machiavelli 101, with Professor Dot as your instructor.

I would like to take a moment to comment on the socio-economic message of the film. I disagree strongly with the choice to portray every entrepreneurial capitalist as a comically inept circus performer. As a believer in the positive benefits free markets provide societies, seeing the market forces represented by cloyingly klutzy clowns is insulting, to say the least. Why didn't the producers simply title their film "A Communist Manifesto for the 21st Century"? Although they portray market forces in an otherwise accurate manner, they clearly come down on the side of the proletariat, not the entrepreneur.

This is not to say the Grasshoppers are entrepreneurs: far from it. They are a ravenous band of landholders, of ancient descent. Like the Boyars of Russia or the Junkers of Prussia, they seek to squeeze every cent from their holdings, even if it means squeezing every drop of blood from their serfs. While their portrayal in the film is harsh, it is mostly deserved. But the "circus bugs" were a poor choice for representatives of the business class. Allegorically, it is a condemnation of middle-class values.

Be that as it may, Flick does contact the circus bugs after they find themselves separated from their employer: the marginal benefit of their performances did not equal the marginal cost of staging them, so that economic activity ceased for them. Accepting Flick's offer of employment, they return with him to Ant Island as a band of foreign mercenaries to create a cadre around which will be organized a potent fighting machine.

Upon their arrival, there is some surprise on the circus bugs' part when the extent of their involvement is revealed. They choose to walk out on negotiations, but Princess Dot manages to provoke the situation and bring about a circumstance in which they feel compelled to stay. In the process, she is able to manipulate the circus bugs into demonstrating their capability and proficiency, and finds them acceptable. In the process, she turns on the charm and brings the circus bugs back to act in their originally intended capacity. Flick brought in the change, nearly losing it, but Dot took over and worked it to her advantage.

We see another disturbing aspect of Dot's machinations in the aftermath of the "rescue" operation. In Flick's absence, apparently, Dot has become involved in a group known as the "Blueberries". The Blueberries have a distinct uniform and martial rituals. Whatever the group's origins, it is plain to see that Dot is their *de facto* leader and they constitute a paramilitary organization that could easily become Dot's private army of ants loyal to her only, not to the Queen or the Ants in general. Dot has selected other young, idealistic Ants, as they are more susceptible to her ideologic propaganda.

Princess Ada, meanwhile, proves completely incompetent as a leader. Constantly reacting to swirling forces around her, her only contribution to the development of events is an offhand remark that Flick amplifies into a request to construct an air force. Dot is able to position her Blueberries to receive specialized training as pilots, while other forces of change are awakened as the Ants mobilize and convert production from foodstuffs to war materiel.

As the Ants arm themselves, Ada allies herself with the proleteriat. Perhaps feeling threatened by Dot's attachment to Flick and the circus bugs, as well as the growing influence of the Blueberry commando, Ada condescends to the workers' level, seeing in them the only possible counterweight to a Dottian *coup*. Here we see the film portraying the Ants not as individuals, but as a collective, powerful mass. They are united. They are without identity. They are a state, not a collection of free persons. For all the positive influence the makers of the film try to attach to the awakening of the proleteriat under Ada's influence, we are nevertheless witness to the beginnings of a possible Communist overthrow of the government and certainly an agitation of the masses with the goal of destroying the power of their ancient masters, the Grasshoppers.

As the Ants arm themselves and proceed down the irrevocable path of industrialization, the Grasshoppers debate if a return to collect their due is really necessary. Hopper, the leader of the Grasshopper class, eliminates those who question his decision in a particularly violent fashion and explains that the rise of the proleteriat is exactly what he fears. Flick is dismissed as a non-threat, but were *all* the Ants to rise? The thought is anathema to the Grasshoppers, and they depart to exact their toll.

At this juncture, the bugs' origin is revealed to the Ants. Although the armaments are in place and the fight against the Grasshoppers all but begun, the traditionalist elements among the Ants, long sidelined by the rise of Dot's and Ada's factions, reassert themselves and order an end to the changes. Flick is banished, and the Ants are ordered back to work in the fields in a desperate attempt to turn back the clock.

It is in this state of Ant society disorganization that the Grasshoppers return to receive their payment. The result is a total rout for the traditionalist elements. Their last gasp of conservatism failed to produce the necessary tribute for the Grasshoppers, and their ways are over, forever.

The Ants failed to gather enough food for a second offering, ostensibly because of their overworked state from the armaments program. Yet, following the defeat of the Grasshoppers, there is plenty of food for all. Furthermore, the supposedly tired Ants are quite capable of putting up a fierce battle with the Grasshoppers when called upon. One must ask if the failure to gather additional food was legitimate or perhaps a work slowdown ordered by Ada or Dot. Both stood to gain from overturning the traditionalists, and Dot stood to gain the most. Given Ada's lackluster leadership and lack of any initiative, I would place the impetus for the slowdown at Dot's feet. The Ants had already tasted a bit of the possibilities with industrialization, and likely as not were sympathetic to the prospect of ridding themselves of both traditional rulers and the Grasshopper aristocracy.

So we return to the Ants, and their plight under direct rule of the Grasshoppers. While the Grasshoppers set about providing incentives to produce more (no more tired and flagging workers now!), they also plot an execution of the Queen as demonstrative of their power. While useless as a ruler, her status as figurehead is nevertheless symbolic and inspirational to the common Ants, and they can be made to fight for her. But with the Grasshoppers in place, the disorganized Ants would be slaughtered in any peasant uprising.

Dot and her Blueberries, however, are sufficiently skilled in the clandestine arts to both acquire the Grasshoppers' plans and escape their patrol sweeps. They go underground to foment rebellion. Dot personally takes it upon herself to go and re-recruit the circus bugs to re-energize the Ant war machine. Although those who judge her on the surface might be terrified to see her pursued by one of the tougher Grasshoppers, those who know Dot's competency are not surprised to see her dispatch the Grasshopper with both martial skills and clever stratagems. Dot was never in any danger in that episode.

Dot locates the circus bugs and convinces them to return with her, but Flick, in their company, expresses his disillusionment and the bugs hesitate. Dot hadn't come all that way just to get "no" for an answer, so she reminds Flick of his bond with her, a bond Dot risked nothing to acquire, but Flick honors nevertheless. Once more, we are confronted with the spectacle of capitalist as object of ridicule, and the bugs are on their way back to Ant Island.

When the bugs return, Dot follows Machiavelli's dictums and strikes without delay, lest her enemies strengthen over time. While her Blueberry-stormtroopers make their way to the secretly hidden air force, the

bugs engage in distractionary maneuvers. It is interesting to note that Dot allows Flick to present the plans, so that the blame is his should anything go wrong, but the Blueberries do not act on the plans until Dot gives the order.

The circus bugs secure the person of the Queen in the course of their distraction and then the Blueberries launch their attack. Their command of the air completely overwhelms the technologically backward Grasshoppers, and put most of them to flight. In a sane, rational world, they would have driven off the Grasshoppers and have established military superiority in the region, but we are treated once more to the madness of the film makers' skewed views on capitalism. The entrepreneur mistakenly destroys the Ant air force with a stroke and completely ruins any hope of Dot's victory.

All the same, I will grant that perhaps Dot's resistance could have suffered a military reversal on its own. To be sure, it would not have been as comically portrayed as in this allegory of shame, but so the story goes...

The Grasshoppers reorganize and retaliate. Dot's tactic of letting Flick think he is a leader pays off when Hopper focuses his wrath - and potential execution - on Flick instead of the real power on the scene, Dot. When Hopper is ready to put Flick to death, however, Ada steps forward, more out of emotional need to be loved than out of actual calculation. For, if Flick dies, Ada will be seen as a fraud by all other Ants, and her commitment to their welfare seen for a charade. She throws herself into the fray, pell-mell, and brings the other Ants with her.

The proletariat rises in a workers' revolution most feared by the Grasshoppers. In a scene worthy of the most dread Maoist propaganda, a multitude of nameless, personality-less Ants - a *state* of Ants - overthrows the Grasshoppers, for good, and seizes control of all resources on the island.

There is a brief romantic interlude as Ada and Flick find love as Flick manages to see Hopper's demise, but it is of no consequence. The Grasshoppers are gone and the Ant workers will never go back to traditional ways. Hopper may have thought he would be able to raise more Grasshopper knights to quell the rebellion, but they would have been dashed on the polearms of the yeoman Ants.

The film ends with an idyll: old royalty is retired and resigned to a gilded existence; Ada receives the crown; workers everywhere are industrialized and productive. The Ant economy is booming, with much promise of innovation to come. Although predominately agrarian, the Ants are already on the path to industrialization, as evidenced by their elaborate technology evident in their celebrations. Everyone lives happily ever after as the circus bugs depart. Right?

Although the credits roll at this point, that cannot possibly be the end of the story. Dot remains every bit the schemer and manipulator and retains control of her Blueberries. The circus bugs had gotten too attached to those Dot needs to dispose of to take over the country, so they had to leave before she could make her next move.

Ada is incompetent as ever and will either abdicate in favor of Dot or, more probably, muddle about as ruler, unable to handle the new economic pressures she's unleashed, and allow the situation to deteriorate so precipitously that Dot steps in to rescue the situation and give Ada her exit. Once Dot is in control, she'll likely as not consolidate her authority through strict reactionary policies. As long as she can keep the Ants productive and happy, they'll be unlikely to ask any questions, such as what became of Flick, the person who brought so much change to Ant Island? He would be of no use to a Queen Dot, and would likely be disposed of so as to keep him from agitating another revolution. Ada and the Queen Mother herself would also likely make quiet departures to a Dottian concentration camp, along with other former nobles and any odd Grasshoppers that happen by. Once her revolution is consolidated, Dot would reign as right-wing generalissimo of Ant Island, with most Ants happy their standard of living had improved, but leery of the new boss that seems every bit as much like the old boss.

## Economics Focus

Whether as an end-of-semester review or as a means of introducing new concepts in a course, the film *A Bug's Life* runs the gamut of basic Economic considerations. These first questions deal with Macroeconomic issues. All answers require an assertion with justification. Rather than provide a key, students and teachers should arrive at correct answers together. That way, I don't have to draw a bunch of diagrams to get this assignment knocked out. (*Pay me some, and I'll start drawing...*)

1. At the start of the movie, what are the resources of Ant Island? What resource do they lack most of all? What changes in the Ants' resources do we see through the film? Are the Grasshoppers entrepreneurial talent, or are they just annoying?
2. Is Ant Island at full employment at the start of the film? When they are working on making the bird? At the end?
3. What would a production-possibility graph for Ant Island look like at the start of the film? When they are working on making the bird? At the end?
4. What would a circular-flow chart for Ant Island look like at the start of the film? When they are working on making the bird? At the end?
5. Is a circular-flow model sustainable if the Grasshoppers take in factors and return nothing in a traditional economy? In a command economy? In a market economy?
6. When the Grasshoppers demanded more food, the Ants increased their output of food. Is this an artificial example of the laws of supply and demand?
7. At the end of the movie, have the Ants begun to specialize? What economic benefits would they reap from specialization?
8. Who makes production decisions for the Ants at the start of the film? When they are working on making the bird? At the end?
9. What will have to happen for the Ants to have corporations? Enforcement of contracts? National defense? Development of trade? Economic stability?
10. Assume the Ants contact a friendly, but highly advanced nation of Termites. The Termites make everything the Ants make at double the quantity the Ants produce, but with the same usage rate of resources. Will it be to anyone's advantage to trade? What would be a profitable exchange rate for the Ants? For the Termites?
11. Measure the GDP of Ant Island at the start of the movie using both the expenditures and the income approach. How does it compare with the GDP of Ant Island at the end of the movie?
12. As Antian production increases, what will happen to their CPI? How will their economy adjust to that change? What changes will be needed to allow for economic stability?
13. Is there an underground economy on Ant Island? What would be involved in an underground Antian economy?
14. Who is part of the Antian labor force? As the Ants continue to industrialize, who will become unemployed? Will new jobs be created for those workers?

15. What would happen to the economy of Ant Island if diggers expanding the mound discovered a vast fungal forest of seemingly limitless quantities of edible and tasty fungi?
16. What would be the MPC and MPS for the Ant economy at the start of the film? When they are working on making the bird? At the end? Would they change?
17. If the Ants have zero investment at the start of the movie, what would that imply about their real interest rates? If the Ants manage to decrease interest rates, how will that affect demand for investment?
18. Given the change in investment demand in question #17, what will happen to the Ants' equilibrium GDP?
19. Let us say the Ants increase their MPS from zero to some fraction by the end of the movie. How will that affect the GDP multiplier?
20. Considering the case of a primitive Ant economy and an advanced Termite economy, which economy is likely to have a positive balance of trade? How will faster economic development in that economy affect the balance of trade?
21. What would an AD/AS graph showing the economy of the Ants look like at the start of the film? When they are working on making the bird? At the end?
22. Based on your answers in #21, which is likely to be a bigger issue in the near future for Ant Island, high inflation or unemployment?
23. What fiscal policies could an Ant government pursue to correct the problem in #22? If Flick were in charge of government spending and did the absolutely wrong thing, what would he do and how would it affect the economy?
24. If inflation were becoming a problem for the Ants, what would make up the recognition lag, the administrative lag, and the operational lag?
25. What could the Ants use for money? How would they be able to conduct banking transactions?
26. Given your definition of Ant money, what would constitute M1, M2, and M3 for the Ants?
27. Draw a money-market graph showing the change in demand for money from the beginning of the film to the end of the film, assuming the Ants do indeed have money.
28. If money were represented by a non-perishable resource, like well-stored grain, could Antian banks still create money?
29. If the Ants sought a currency union with the Termites, would they be willing to switch to the Wood Standard the termites use?
30. What monetary policies could an Ant central bank pursue to correct the problem in #22? If Flick were the chairman of the Ant Fed, and implemented the absolutely worst possible monetary policies, what would he do and how would it affect the economy?
31. Which economy, the Ant or the Termite, is most likely to be a net exporter of debt? Would it be possible for that economy to export so much debt, it becomes a threat to economic stability? If so, describe several possible scenarios. If not, describe what safety mechanisms are in place to preserve stability.

And now the Microeconomic questions... For these, let us assume the Ants are a firm in a competitive market instead of being a nation. We will say they are an agribusiness firm and they produce, of all things... *food*.

1. How elastic is the demand for food? How is that related to the price of food?
2. Construct a graph comparing price to quantity demanded of Ant food.
3. Construct a graph comparing total revenue (in thousands of small, pretty pebbles) to quantity demanded of Ant food.
4. How much time would the Ants have to respond to a change in demand? How will that affect price elasticity?
5. What are some possible complimentary goods for Ant food? Substitute goods? How would their price changes affect demand for Ant food?
6. If more affluent bugs preferred food made by Bees to food made by Ants, what would that imply about Ant food?
7. Once the Ants industrialize food production, what will be the effects of adding additional workers to production? Will the current number of Ants harvesting food be too many, resulting in a layoff?
8. What would be the opportunity cost of the Ant corporation diversifying production?
9. What are some short-run and long-run decisions that could be made about production?
10. What if the Ant corporation acquired other Anthills? What could be the possible benefits and pitfalls of such acquisitions?
11. Imagine dozens of other Anthills, each producing food. Describe what conditions would prevail if there were pure competition, monopolistic competition, oligopoly, and monopoly. Which market model do you think would benefit the Grasshoppers most? Which market model benefits the Ants most?
12. Assume the Ants are operating at a break-even point. What adjustments would be necessary if there were a drought and production was off for a season? What if a large part of the seed-bearing grass died? Show the adjustments with a graph showing changes in ATC, AVC, and MC.
13. Assume the Grasshoppers are unable to make their own food and return to the Ants, who are the sole suppliers of food. What could you say about MR and Price in this case?
14. Now assume many, many Grasshoppers needing food and many, many Anthills producing food. What will the Ants of Ant Island need to do to boost sales of their product?
15. If there were several dominant Anthills controlling others as subsidiaries, construct a graph showing MR, ATC, D, and MC for that market situation. What complications could arise in this sort of market?
16. In which sort of market condition would R&D expenditures by the Ants be maximized?
17. What if the Grasshoppers each were responsible for a small plot of land on Ant Island and did not band together, but instead sold rights to harvest grain to the Ants. What could you say about the resource market in this case?
18. How would wages for worker ants be affected if the Anthill were actually several different firms instead of a

single firm?

19. What if the grain-harvester operators required special training? How would their wages be affected?
20. What if the grain-harvester operators unionized? How would that affect their wages? What could the firms do in reaction to that development?
21. What possible other uses could the land of Ant Island be put to that would increase the value of their rents?

## **Government Focus**

Here's some questions on government, as if the previous twisted plot summary wasn't enough...

1. Does the Antian government (without Grasshoppers) reflect Hobbesian or Lockean political thought?
2. Would the Ants be more or less resentful of oppression if it was other Ants demanding the Offering instead of Grasshoppers?
3. Are there any potentially democratic institutions in Antian society that could flower into democratic government?
4. Once the Ants are independent from the Grasshoppers and industrialize, what interest groups would form? How would they impact the formation of policy?
5. What drawbacks are inherent in the concentration of executive power in a single Ant?
6. Are there any factions interested in democratic development in Ant Island? Which is more important to the Ants, economic or political development?
7. If Dot were able to seize control of Ant Island, what function would her Blueberries serve?
8. If Dot took over Ant Island, would she establish an ideological dictatorship, with a party committee selecting the chief executive, or simply continue the dynastic line?
9. Contrast Dot's public presentation with her inner goals. How valuable is it for a politician or ruler to keep up appearances for the consumption of the general public?
10. Defend or refute Webb's assessment of the film. If you refute Webb, provide an alternative explanation for events depicted in the film that accounts for the changes Ant society experiences. If you defend Webb, then provide an expanded description of events in the film from his twisted point of view.