

# Equilibrium Seeking

## Chapter 15: Equilibrium Seeking

### Observer Commentary

Systems in disequilibrium expend energy seeking stable configuration. After violent energy release, system explores multiple possible equilibrium states before settling.

Physical analogy: Earthquake releases tectonic stress, ground shifts violently, then oscillates before settling into new stable configuration. The new configuration differs from pre-earthquake state. Fault lines have slipped. Structures have collapsed. The landscape is transformed. But the system is stable—until new stress accumulates.

Post-conflict systems follow similar pattern:

**Phase 1:** Violent energy release (combat operations) **Phase 2:** Oscillations around equilibrium (continued fighting, negotiations, positioning) **Phase 3:** Settling into stable configuration (ceasefire, peace treaty, or complete victory by one side)

The equilibrium reached depends on: – Relative power of parties after energy expenditure – External constraints (international pressure, economic costs, domestic political limits) – Acceptable loss thresholds (how much damage each side willing to absorb) – Alternative options available (continued fighting vs. negotiated settlement)

Taiwan Strait conflict, Day 14:

PLA has established control over western Taiwan coastline from Taipei to Kaohsiung. Major cities remain contested. Taiwan government has relocated to eastern mountains. Taiwan military continues resistance but has lost 60% of air force, 70% of navy, 40% of ground forces. Civilian casualties estimated at 45,000. Infrastructure heavily damaged.

PLA casualties estimated at 18,000. Naval losses significant. Amphibious operations more costly than predicted. Urban warfare in Taipei and Taichung producing heavy casualties without decisive result.

US has imposed comprehensive sanctions on China but has not intervened militarily. Japan has closed ports to Chinese vessels. EU has condemned the invasion but taken limited action. Russia has provided diplomatic support to China. Global economy is in recession due to semiconductor shortage and trade disruption.

Neither side has achieved decisive victory. Neither side has clear path to victory. Both sides are bleeding. The question is which will exhaust first, or whether negotiation becomes preferable to continued bloodshed.

Observation point: Day 14, various locations. System is seeking equilibrium.

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## Human Narrative

### Taipei – Occupied Zone, Day 14

The PLA had taken most of western Taipei but not all of it. The eastern districts, including the mountains that ringed the city, remained under Taiwan control. The result was a complex battlefield where front lines shifted daily through city streets and neighborhoods.

Lin Xiaowen's apartment was in the occupied zone. She had not left in fourteen days. Supplies were running low—food, water, electricity intermittent. The PLA had established checkpoints throughout the area, restricting movement. Occasionally, Taiwan military conducted raids or fired artillery from the mountains, and the PLA responded with overwhelming force. Civilians caught between them died.

She sat in her apartment listening to the sound of fighting a few kilometers away—automatic weapons fire, explosions, the crack of tank guns. Closer, she could hear PLA soldiers in the street below, speaking Mandarin with mainland accents, checking IDs, searching buildings for Taiwan soldiers.

Her phone no longer worked—cell towers destroyed or jammed. Internet was intermittent and heavily monitored by PLA. She had no reliable information about what was happening beyond her neighborhood. Rumors circulated: US was preparing to intervene, Taiwan government had fled to Japan, PLA was preparing final assault on mountain redoubts, nuclear weapons had been authorized.

She didn't know what to believe.

There was a knock on her door. She froze. PLA soldiers had been going door-to-door, searching for weapons and military-age males. She was neither but fear was paralyzing nonetheless.

“Open the door. PLA inspection.” The voice was brusque, Mandarin with northern accent.

She opened the door. Three soldiers, young, rifles pointed down but ready. One carried a tablet with what looked like ID database.

“Name?”

“Lin Xiaowen.”

He checked the tablet. “Occupation?”

“Software engineer.”

“Where do you work?”

She named her company. The soldier scrolled through data. “Your company had contracts with Taiwan military. Explain.”

“I did user interface design for civilian applications. I had no access to military systems.”

The soldier studied her face, comparing to the ID photo on his tablet. “You have relatives in mainland China?”

“No.”

“Extended family?”

“My grandmother’s family came from Fujian eight generations ago. I don’t know anyone there.”

He made a note. “You will report to the Civil Administration Office at the school on Zhongshan Road tomorrow at 09:00 to receive residency permit and food ration card. Failure to report will result in arrest. Do you understand?”

“Yes.”

“Do you have weapons in this apartment?”

“No.”

“We will search.” They pushed past her and began methodically going through her belongings—opening drawers, checking closets, looking under the bed, scanning with some kind of electronic device.

They found nothing because there was nothing. After ten minutes, they left without another word.

Xiaowen closed the door and sat on the floor, shaking. This was occupation. This was what “reunification” meant: Soldiers going through her underwear drawer, demanding she report for identification papers, restricting her movement in her own city.

And this was only the beginning. If PLA solidified control, what came next? Reeducation? Political officers monitoring her conversations? Social credit

systems tracking her behavior? The full apparatus of authoritarian control imported from the mainland?

She thought about the elderly Professor Liu she had interviewed for a project before the war. He had lived through multiple regime changes—Japanese colonial rule, ROC martial law, democratization. Now, in his final years, he was experiencing another transformation.

If he was still alive. She had no way to know.

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#### **PLA Field Command, Taichung Suburbs, Day 14**

General Tang Yongsheng stood in the mobile command vehicle reviewing casualty reports. 18,000 PLA dead. Another 35,000 wounded. Worse, the amphibious fleet had suffered losses that would take years to replace—six landing ships sunk, twelve destroyers damaged or destroyed, countless smaller craft.

And they still didn't control the island. Taipei was partly occupied but Taiwan forces held the mountains. Taichung was a wasteland of urban combat. Kaohsiung's port was unusable due to Taiwan demolitions. And eastern Taiwan remained entirely under Taiwan government control, resupplied by submarines and aircraft operating from improvised bases.

The invasion should have succeeded in five days. They were on day fourteen and victory was not assured.

His intelligence officer briefed the latest assessment: "Sir, Taiwan forces have withdrawn from most coastal positions and consolidated in the Central Mountain Range. They've adopted an asymmetric strategy—hit-and-run raids, ambushes, avoiding direct confrontation. Our forces are stretched thin trying to occupy territory while also defending against raids."

"What are our options?"

"Three. First, conduct full assault on mountain positions. This would be extremely costly—mountain warfare favors defenders, weather is degrading, and Taiwan has prepared these positions for decades. Estimated casualties: 40,000–60,000 to achieve victory.

"Second, settle into occupation of coastal regions and blockade the remainder. Gradually starve out Taiwan government through attrition. This could take months or years, and international pressure would increase during that time.

"Third, negotiate. Offer Taiwan autonomy deal similar to Hong Kong—one country, two systems. Declare victory based on current territorial control and end active combat."

General Tang knew which option Beijing preferred: Option one. Complete victory. But he also knew option one might destroy the PLA's capacity for future operations. And there was a fourth option no one was mentioning: Taiwan could refuse to surrender even after conventional military defeat, conducting insurgency indefinitely.

"What is Taiwan's capacity for continued resistance?"

"Degraded but substantial. They've lost majority of heavy equipment but have tens of thousands of infantry, ample small arms, and intimate knowledge of terrain. If they transition to guerrilla warfare, we could face decades of occupation duty with continuous casualties."

"Have there been any informal contacts about negotiation?"

"Unofficial channels suggest Taiwan government willing to discuss cease-fire if we withdraw from occupied cities. We've rejected this—we cannot withdraw after suffering these losses. They've countered by suggesting UN peacekeepers to monitor ceasefire. Beijing has rejected UN involvement."

"So we're deadlocked."

"Yes, sir."

Tang looked at the map showing PLA positions in red, Taiwan positions in blue, and contested zones in purple. Most of the map was purple.

He thought about something his father had told him as a child: "Beginning war is easy. Ending war is hard. Make sure you know how you'll end it before you start it."

They had started without knowing how it would end. And now they were discovering that military force alone couldn't achieve political objectives.

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#### **Eastern Taiwan – Provisional Government Command, Day 14**

Taiwan's President sat in a tunnel complex carved into the mountains, surrounded by military officials and remaining cabinet members. The meeting was tense.

"Casualties?" he asked.

The Defense Minister responded: "Military: 22,000 KIA, 41,000 WIA, 8,000 MIA. Civilian: Estimated 45,000–60,000 dead, mostly in the first week of bombing and during urban combat."

The room was silent. Those numbers represented families destroyed, children orphaned, futures erased.

"Can we win militarily?" the President asked.

“No, sir. Not in conventional terms. We can continue resistance indefinitely from mountain positions, conduct raids, make occupation costly. But we cannot eject PLA forces from coastal regions without external support.”

“Is US support coming?”

The Foreign Minister shook his head. “US has imposed maximum sanctions but will not intervene militarily. They’ve made that clear through back-channel communications. They will provide intelligence, cyber warfare support, diplomatic backing, but no direct combat operations.”

“So we’re alone.”

“Yes, sir.”

The President looked around the table. “What are our options?”

Someone said quietly: “Surrender and negotiate best terms possible.”

“That’s capitulation. We’d be absorbed into PRC, our democracy destroyed, our sovereignty erased. Everything we fought for would be lost.”

“With respect, sir, it’s already lost. They occupy our major cities. Our civilians are suffering under occupation. How many more need to die before we acknowledge military reality?”

Another official countered: “If we surrender, it validates their aggression. It tells China and the world that democracies can be conquered if you’re willing to be brutal enough. We have moral obligation to resist.”

“Moral obligation doesn’t stop bullets. It doesn’t feed starving civilians. It doesn’t resurrect the dead.”

The debate continued, voices rising. Finally the President held up his hand. “Enough. Here is what I’ve decided. We will not surrender unconditionally. But we will communicate through back channels that we’re willing to negotiate ceasefire with the following conditions:

“One, PLA withdraws from city centers but can maintain coastal presence.

“Two, international peacekeepers monitor the ceasefire.

“Three, political status to be negotiated over five-year period with international mediation.

“Four, Taiwan retains its military and government structures during negotiation period.”

“Sir, Beijing will never accept those terms.”

“Perhaps. But we must try. The alternative is years of grinding warfare that destroys what’s left of our country. I’d rather negotiate from position of continued resistance than from position of total defeat.”

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## Beijing – Zhongnanhai, Day 14

President Xi Jinping sat across from his senior advisors in the emergency session that had become daily ritual.

“Assessment?” he demanded.

The Defense Minister spoke: “Sir, we control approximately 60% of Taiwan’s territory, including all major ports and most coastal areas. However, Taiwan government remains functional in eastern mountains and continues armed resistance. Complete military victory would require extensive mountain warfare with high casualties and uncertain timeline.”

“Casualties to date?”

“18,000 KIA, 35,000 WIA. Naval losses significant.”

Xi’s expression darkened. The plan had projected 5,000 casualties for complete victory. They were at 18,000 and victory was incomplete.

“International response?”

The Foreign Minister: “Severe sanctions from US, EU, Japan. Trade disruptions causing economic damage. Global GDP projected to contract 3–4% due to semiconductor shortage and supply chain disruptions. Some African and Latin American countries remain neutral or supportive, but major powers are aligned against us.”

“Diplomatic isolation?”

“Substantial. UN Security Council deadlocked due to our veto, but General Assembly has passed resolution condemning the invasion by 128–18 vote.”

“Domestic situation?”

The propaganda chief: “State media is maintaining narrative of reunification liberation. Public supports the operation but casualties are starting to affect morale. Gold Star families are grieving. Social media sentiment is mixed—nationalist fervor is strong but costs are becoming apparent.”

Xi listened without expression. Then: “What are our strategic options?”

The Defense Minister presented three scenarios matching General Tang’s assessment. Xi interrupted: “Option one—complete military victory. What is your honest assessment of success probability?”

“70–80%, sir. But at very high cost—perhaps 50,000 additional casualties, extended timeline, and significant risk of Taiwan transitioning to insurgency that could last decades.”

“Option three—negotiation. What would we have to concede?”

“Taiwan is signaling willingness to discuss ceasefire if we withdraw from city centers. They’re requesting international mediation and long-term status negotiation.”

“Absolutely not. We don’t negotiate territorial integrity with rebels, and we don’t invite international interference in domestic matters.”

“Then we’re locked into option two—long-term occupation and blockade. This means indefinite military presence, continued casualties from resistance operations, sustained economic costs, and persistent international pressure.”

Xi was silent for a long moment. Then: “Here is my decision. We will maintain occupation of captured territory. We will not withdraw from cities—that would signal weakness after our losses. But we will pause major offensive operations for thirty days. Use this time to consolidate control, establish civil administration, and reduce Taiwan’s capacity for resistance through targeted operations. After thirty days, we reassess whether to continue offensive or settle into long-term occupation.”

“And if Taiwan refuses to accept occupation?”

“Then they continue suffering the consequences of their refusal. Eventually, attrition will force capitulation. Time is on our side.”

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### San Francisco, Day 14

Sarah Huang watched the news from her apartment, feeling helpless and guilty. Taiwan was being destroyed while she sat in safety. Her cousin Derek’s messages had stopped three days ago—his last message: “Fighting near our neighborhood. Going to shelter. Not sure when I can message again.”

She didn’t know if he was alive.

She had participated in protests outside the Chinese consulate, had donated money to Taiwan relief organizations, had called her Congressional representatives demanding US intervention. None of it mattered. The war continued. Taiwan was losing. And she was safe in America.

Her company had sent a counseling support email about “employees affected by the Taiwan situation.” The euphemism was insulting. This wasn’t a “situation.” It was a war. Her family was being bombed.

She had stopped going to work. She spent days watching news, scrolling through unverified social media reports, checking message apps for word from relatives.

Her mother had called from Tainan two days ago—somehow gotten a call through—to say they were still alive but terrified. PLA hadn't reached Tainan yet but everyone expected it was coming. People were fleeing into the mountains. Her mother asked if she could somehow arrange for Sarah's grandparents to evacuate to the US.

Sarah had tried. She had contacted State Department, called immigration lawyers, reached out to Congressional offices. The answer was the same: With airports destroyed and ports blocked, there was no way to evacuate civilians from Taiwan. They were trapped.

She pulled up the video call app and tried Derek's contact. No connection. She tried other relatives. No connections. Taiwan's communication infrastructure was degraded or controlled by PLA.

She felt suffocated by helplessness. She had escaped. She was safe. But everyone she loved was in the warzone and she couldn't reach them, couldn't help them, couldn't even know if they were alive.

She opened her journal and typed:

I thought identity was a choice, something fluid and optional. But when your family is being killed, identity stops being abstract. I'm Taiwanese. Not by choice but by fact. My people are dying and I'm powerless to stop it.

Everyone says I'm lucky to be in America. But I don't feel lucky. I feel like a coward who ran away while others fought and died.

If Taiwan falls—when Taiwan falls—what am I? American with Taiwanese ancestry? Diaspora from a country that no longer exists? Living memorial to a dead nation?

I don't have answers. I just have the guilt of survival and the grief of helpless witness.

She closed the laptop and cried.

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## Observer Commentary

Duration of narrated events: 14 days since conflict initiation. System status: Oscillating around equilibrium, multiple possible stable states remain possible.

Analysis of equilibrium-seeking process:

The system has expended massive energy in violent reorganization but has not settled into clear equilibrium state. Multiple parties are testing different configurations:

**PLA:** Controls territory but lacks complete victory. Exploring whether occupation is sustainable or further offensive required.

**Taiwan government:** Maintains resistance but cannot achieve military victory. Exploring whether continued fighting or negotiation serves survival better.

**US/International community:** Imposed costs on China but not sufficient to force withdrawal. Exploring whether current sanctions are adequate or escalation necessary.

**Result:** No party has achieved preferred outcome. All parties are adapting to reality that differs from initial expectations.

This is characteristic of complex system evolution: Initial conditions and predictions rarely match actual outcomes. System explores multiple pathways before settling into stable (but often unexpected) configuration.

Potential equilibrium states:

**State 1: Complete PLA victory** (30% probability decreasing) – Requires additional major offensive with high casualties – Taiwan transitions to insurgency, requiring decade+ occupation – International sanctions persist, economic costs continue – Pyrrhic victory—objective achieved but costs exceed benefits

**State 2: Frozen conflict** (50% probability increasing) – PLA maintains occupation of western Taiwan – Taiwan government controls eastern mountains – Ceasefire without formal resolution – Situation persists indefinitely, like Korea post-1953 – Both sides declare victory, neither has won

**State 3: Negotiated settlement** (20% probability) – Some form of autonomy arrangement – International mediation – Face-saving for both sides – Requires both sides accepting compromise of core positions – Low probability because both sides have invested too much credibility in victory

Current trajectory suggests State 2 most likely. Neither side can achieve complete victory at acceptable cost. Neither side willing to accept defeat. System stabilizes in costly stalemate.

Observation on human suffering:

From thermodynamic perspective, the war is energy transformation process—ordered systems becoming disordered. From human perspective, it is tragedy on massive scale.

- 100,000+ casualties (killed and wounded, military and civilian)
- Millions displaced from homes
- Infrastructure damage requiring decade to rebuild
- Psychological trauma lasting generations
- Economic costs in trillions of dollars
- Diplomatic relationships damaged for decades

These costs will be borne by organisms who did not choose the conflict and cannot end it. The organisms we have observed—Lin Xiaowen, Chen Wei, Sarah Huang, Dr. Evelyn Zhang, military officers on both sides—are all victims of system-level dynamics beyond their control.

Their individual choices, beliefs, and actions had negligible effect on whether war occurred or how it progressed. They were swept up in forces generated by political leadership, institutional momentum, nationalist ideologies, and historical contingencies.

This is the fundamental truth about large-scale human conflicts: They are experienced individually but determined collectively. No individual is responsible, yet all individuals suffer.

Observation on Sarah Huang's identity crisis:

The organism previously maintained identity superposition—simultaneously American and Taiwanese, treating both identities as optional performances. War has forced collapse of superposition. She experiences herself as Taiwanese because that identity is under existential threat.

This demonstrates that identity, while socially constructed, becomes viscerally real under extreme conditions. When your family is being killed because of their identity, the abstract philosophical position “identity is constructed” provides no comfort.

Construction doesn't mean illusion. Constructed things—nations, identities, moral systems—are as real as biological things. They shape behavior, motivate sacrifice, structure human experience. Their constructedness is irrelevant to their functional reality.

Observation on equilibrium characteristics:

When system settles into stable state (whichever state that proves to be), it will have following characteristics:

1. **Higher entropy than pre-war state:** Destroyed infrastructure, dead people, broken social bonds cannot be restored to original configuration. The new equilibrium will be degraded version of pre-war system.
2. **Unstable long-term:** Even if fighting stops, underlying tensions remain. Taiwan population will not accept PLA occupation voluntarily. International community will not accept Chinese control as legitimate. Resentment will accumulate, creating potential energy for future conflict.
3. **Irreversible in key respects:** Dead people cannot be resurrected. Destroyed cities can be rebuilt but not restored. Trust cannot be regenerated. Some system properties, once lost, are permanently lost.
4. **Adaptive to new constraints:** Surviving organisms will adapt to new reality. Children born during occupation will know only that reality.

Over generations, the system becomes normalized even if unjust.

This is how conflicts settle: Not through resolution of underlying issues but through exhaustion, adaptation, and eventual acceptance of new reality as permanent.

Taiwan pre-war: Democratic, prosperous, distinct identity, functionally sovereign.

Taiwan post-war (regardless of specific outcome): Damaged, traumatized, less autonomous, identity transformed by conflict experience.

The new equilibrium will be worse than pre-war state by almost any measure. But it will be stable—until next perturbation accumulates sufficient energy to trigger another transformation.

Physics does not discriminate between better and worse equilibria. It only requires that energy be conserved and entropy increase. Human suffering is thermodynamically irrelevant.

But to the organisms suffering, it is everything.

End observation log.

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[Chapter 15 Complete – Part III: Energy States Complete]