

GEMS FROM THINKERS ...

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Introduction to Mental Models

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Mental Models: The Key to Understanding the World

- ▶ Mental models are cognitive frameworks individuals use to interpret situations, make decisions, and solve problems.
- ▶ Built over time through experiences, learning, and interactions with the world.
- ▶ They simplify complexity, provide perspective, and aid problem-solving.
- ▶ Influenced by culture, assumptions, and beliefs.
- ▶ Offer a versatile toolbox for navigating various situations and challenges.

Examples:

- ▶ Using the mental model of "supply and demand" to understand pricing fluctuations in the market.
- ▶ Applying the "cost-benefit analysis" mental model to decide whether to pursue further education.

Eliminating Blind Spots

- ▶ The person with the fewest blind spots wins in life and business.
- ▶ Blind spots are the source of all poor choices.
- ▶ Perfect information would lead to perfect decisions.
- ▶ Reducing blind spots requires changing perspective.
- ▶ Different perspectives reveal critical information and new solutions.

Examples:

- ▶ Seeing all players' cards in poker ensures perfect play.
- ▶ Changing the angle of a photograph to capture a better shot.

Using Multiple Mental Models

- ▶ Each model acts as a lens to view the world differently.
- ▶ Combining lenses reveals more information than each one individually.
- ▶ Specific models are numerous, but only a handful of general ones from big disciplines are crucial.
- ▶ Understanding general models helps reduce errors and uncover hidden insights.
- ▶ Better actions result from applying these diverse perspectives.

Mental Model Toolbox

- ▶ "You've got to have models in your head and you've got to array your experience – both vicarious and direct – onto this latticework of mental models." - Charlie Munger
- ▶ Worldly wisdom involves understanding the consequences of actions.
- ▶ Wisdom aligns facts with reasoning.
- ▶ Disciplines are interconnected in the real world.
- ▶ Insights from various fields like physics can enhance understanding and performance in business.

A Latticework of Mental Models

- ▶ The world is interconnected like a latticework.
- ▶ Knowledge isn't confined to distinct disciplines.
- ▶ For instance, business can benefit from physics principles like velocity and kinetic energy.
- ▶ Teachers might not integrate big ideas from all disciplines, but self-learning is possible.
- ▶ Connecting insights across fields leads to better understanding and decision-making.

Core/Generic Mental Models

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The Map is Not the Territory

- ▶ The map of reality is not reality itself.
- ▶ Maps are reductions and inherently imperfect.
- ▶ A perfect map would be as large as the territory itself and thus impractical.
- ▶ Maps can represent outdated snapshots of reality.
- ▶ Recognizing this helps avoid over-reliance on models and maps.

Examples:

- ▶ A GPS map shows the route but not the current traffic conditions.
- ▶ Business forecasts are useful but can't predict unexpected market shifts.

Circle of Competence

- ▶ Understand your strengths and limits.
- ▶ Knowledge of your competence provides a competitive edge.
- ▶ Awareness of blind spots allows for better learning and growth.
- ▶ Ego-driven actions outside your competence lead to mistakes.
- ▶ Honest self-assessment improves decision-making.

Examples:

- ▶ An investor sticks to industries they understand.
- ▶ A software developer specializes in a particular programming language.

Pareto Principle (80/20 Rule)

- ▶ Highlights the imbalance between input and output, where roughly 80
- ▶ Originated from economist Vilfredo Pareto's observation of land ownership distribution in Italy.
- ▶ Applied broadly, implying that a minority of efforts lead to the majority of outcomes in various scenarios.
- ▶ Examples include 80
- ▶ Guides resource allocation and decision-making by focusing on the vital few elements that significantly impact outcomes.

Examples:

- ▶ A company realizing that 80
- ▶ Identifying the 20

Applications

- ▶ Business: Focus efforts on retaining and serving high-value clients to maximize revenue.
- ▶ Personal productivity: Prioritize tasks that contribute most to

Pareto Principle (80/20 Rule): Applications

- ▶ Business: Focus efforts on retaining and serving high-value clients to maximize revenue.
- ▶ Personal productivity: Prioritize tasks that contribute most to productivity to maximize efficiency.
- ▶ Quality control: Address critical issues that cause the majority of problems for substantial improvements.
- ▶ Guides resource allocation and decision-making by focusing on the vital few elements that significantly impact outcomes.

The 5 Whys

- ▶ Problem-solving technique involving iteratively asking "why" to identify the root cause of an issue.
- ▶ Digs deeper into problems to address fundamental issues rather than surface-level symptoms.
- ▶ Encourages self-reflection and introspection for personal growth and understanding.
- ▶ Applies a similar introspective approach to understand underlying reasons behind thoughts, behaviors, or beliefs.
- ▶ Unveils core motivations, challenges assumptions, and fosters continuous learning.

Examples:

- ▶ Identifying the root cause of a recurring software bug by asking "why" multiple times.
- ▶ Understanding personal reactions to stress by continuously questioning underlying motivations.

Benefits for Personal Growth

First Principles Thinking

- ▶ Break down complex problems to their basic components.
- ▶ Separate underlying facts from assumptions.
- ▶ Build new knowledge from fundamental truths.
- ▶ Encourages creativity and innovation.
- ▶ Essential for solving novel and complicated problems.

Examples:

- ▶ Elon Musk rethinking battery costs by analyzing raw materials.
- ▶ A chef creating a new recipe by understanding the basics of flavors.

Thought Experiment

- ▶ Use imagination to explore possibilities.
- ▶ Investigate the nature of things without real-world constraints.
- ▶ Learn from hypothetical scenarios to avoid future mistakes.
- ▶ Evaluate consequences and re-examine historical decisions.
- ▶ Helps clarify what we truly want and how to achieve it.

Examples:

- ▶ Schrödinger's cat in quantum mechanics.
- ▶ Imagining the impact of a business decision on future market trends.

Second-Order Thinking

- ▶ Consider the long-term effects of actions.
- ▶ Go beyond immediate consequences.
- ▶ Think holistically about cascading impacts.
- ▶ Prevent unintended side effects.
- ▶ Differentiate yourself by thinking further ahead.

Examples:

- ▶ Implementing a policy that encourages short-term sales might hurt long-term customer loyalty.
- ▶ Environmental regulations affecting not just industry costs but public health and future compliance costs.

Parkinson's Law

- ▶ Work expands to fill the time available for its completion, as stated by Cyril Northcote Parkinson.
- ▶ Tasks tend to align with the given time constraints, leading to adjustments and prioritization as deadlines approach.
- ▶ Inefficiencies, distractions, and lack of constraints contribute to tasks taking up more time than necessary.
- ▶ More allocated time often leads to less efficient use of time, with tasks occupying the entire time frame.
- ▶ Understanding Parkinson's Law aids in time management by recognizing the tendency for tasks to expand to fill available time.

Examples:

- ▶ Procrastinating on a project with a long deadline and completing it at the last minute.
- ▶ Spending an entire day on a task that could have been completed in a few hours if focused and constrained by time

Probabilistic Thinking

- ▶ Estimate the likelihood of outcomes.
- ▶ Use math and logic to improve decision accuracy.
- ▶ Account for complex, multifactorial influences.
- ▶ Identify most likely scenarios and plan accordingly.
- ▶ Enhance precision in uncertain environments.

Examples:

- ▶ Evaluating the risk of an investment based on historical data.
- ▶ Deciding whether to carry an umbrella based on weather forecasts.

Inversion

- ▶ Approach problems from the opposite end.
- ▶ Identify obstacles to success and eliminate them.
- ▶ Think backward to avoid common pitfalls.
- ▶ Helps in discovering unseen perspectives.
- ▶ Effective in problem-solving and strategy formulation.

Examples:

- ▶ Instead of asking how to succeed, ask how to avoid failure.
- ▶ Designing a user-friendly product by first identifying user frustrations.

Occam's Razor

- ▶ Simpler explanations are usually correct.
- ▶ Avoid unnecessary complexity in problem-solving.
- ▶ Focus on explanations with the fewest assumptions.
- ▶ Save time by not disproving unlikely scenarios.
- ▶ Enhance clarity and confidence in decisions.

Examples:

- ▶ Diagnosing an illness with common symptoms rather than rare diseases.
- ▶ Troubleshooting a computer issue by checking simple fixes first.

Hanlon's Razor

- ▶ Don't attribute to malice what can be explained by stupidity.
- ▶ Avoid paranoia and ideological biases.
- ▶ Look for simpler, benign explanations for actions.
- ▶ Recognize that people make mistakes.
- ▶ Seek reasonable explanations before assuming ill intent.

Examples:

- ▶ A colleague's rude email might be due to stress, not personal animosity.
- ▶ A missed appointment could be a simple scheduling error, not disrespect.

Physics and Chemistry Mental Models

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Relativity

- ▶ An observer cannot truly understand a system of which he is a part.
- ▶ A man inside an airplane does not feel movement, but an outside observer can see it.
- ▶ This concept affects social systems similarly.
- ▶ Perspective influences understanding of any system.
- ▶ Recognizing our position helps us understand our limitations.

Example:

- ▶ In a team, an individual may not see the group's progress as an outsider does.

Reciprocity

- ▶ Pushing on a wall results in the wall pushing back with equivalent force.
- ▶ In biological systems, actions are reciprocated in kind.
- ▶ Humans demonstrate intense reciprocity in their interactions.
- ▶ Understanding reciprocity helps predict reactions in social systems.
- ▶ Reciprocity is a foundation of social and biological interactions.

Examples:

- ▶ Helping a colleague often leads to them helping you in return.
- ▶ In nature, animals reciprocate grooming behaviors.

Thermodynamics

- ▶ The laws of thermodynamics describe energy in a closed system.
- ▶ Useful energy is constantly being lost.
- ▶ Energy cannot be created or destroyed.
- ▶ These laws underlie the physical world.
- ▶ Applying these principles to social systems can be profitable.

Examples:

- ▶ In business, resources are finite and must be managed efficiently.
- ▶ In personal energy management, rest and recovery are crucial.

- ▶ An object in motion wants to continue moving in the same direction.
- ▶ This principle applies to individuals, systems, and organizations.
- ▶ Inertia allows for energy minimization.
- ▶ It can also lead to destruction or erosion if not managed.
- ▶ Recognizing inertia helps in predicting and influencing behavior.

Examples:

- ▶ A company with a successful product line may resist innovation.
- ▶ Personal habits are hard to change due to inertia.

Friction and Viscosity

- ▶ Friction opposes the movement of objects in contact.
- ▶ Viscosity measures the difficulty of fluid movement.
- ▶ Higher viscosity leads to higher resistance.
- ▶ These concepts illustrate how environments impede movement.
- ▶ Understanding them helps in navigating and reducing resistance.

Examples:

- ▶ Bureaucratic processes create friction in organizations.
- ▶ Thick social networks can increase viscosity, making change harder.

Velocity

- ▶ Velocity is speed plus vector: direction matters.
- ▶ Speed alone does not determine effective movement.
- ▶ Velocity helps in assessing actual progress.
- ▶ Consider both speed and direction in practical life.
- ▶ Properly directed effort is more productive than speed alone.

Examples:

- ▶ A company growing rapidly but in the wrong market lacks positive velocity.
- ▶ A project moving fast but with constant changes in direction shows no effective progress.

Leverage

- ▶ Leverage allows a small input force to create a great output force.
- ▶ Many engineering marvels were achieved with leverage.
- ▶ Understanding leverage can lead to significant success.
- ▶ Apply leverage in the human world for great impact.
- ▶ Proper use of leverage multiplies effectiveness.

Examples:

- ▶ Using financial leverage to multiply investment returns.
- ▶ Delegating tasks to a team to achieve larger goals.

Activation Energy

- ▶ Chemical reactions require a critical level of activation energy.
- ▶ Combustible elements need activation energy to react.
- ▶ Two elements alone are not enough without activation energy.
- ▶ This concept applies to initiating actions in social systems.
- ▶ Overcoming initial resistance is crucial for progress.

Examples:

- ▶ Starting a new habit requires overcoming initial resistance.
- ▶ Launching a new product needs significant initial effort to gain traction.

Catalysts

- ▶ A catalyst initiates or maintains a chemical reaction without being consumed.
- ▶ Reactions may slow or stop without catalysts.
- ▶ Social systems can also benefit from catalysts.
- ▶ Catalysts can accelerate processes and drive change.
- ▶ Identifying and utilizing catalysts can lead to success.

Examples:

- ▶ A strong leader can act as a catalyst for organizational change.
- ▶ Introducing new technology can catalyze productivity improvements.

Alloying

- ▶ Combining elements creates new, often stronger substances.
- ▶ The result can be greater than the sum of its parts.
- ▶ Alloying principles apply to social systems and individuals.
- ▶ The right combination of elements can create significant synergies.
- ▶ $2+2$ can equal 6 in the right context.

Examples:

- ▶ A well-balanced team outperforms the sum of its individual members.
- ▶ Combining complementary skills in a project leads to superior outcomes.

Biology Mental Models

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Evolution Part One: Natural Selection and Extinction

- ▶ Evolution by natural selection was proposed by Charles Darwin and Alfred Russel Wallace.
- ▶ Species evolve through random mutation and differential survival rates.
- ▶ Natural selection: Mother Nature decides the success or failure of a mutation.
- ▶ Those best suited for survival tend to be preserved.
- ▶ Conditions change, leading to continuous evolution.

Example:

- ▶ Animal breeding is artificial selection; nature's version is natural selection.

Evolution Part Two: Adaptation and The Red Queen Effect

- ▶ Species adapt to their surroundings for survival.
- ▶ Adaptations made in an individual's lifetime are not passed down genetically.
- ▶ Evolution by natural selection leads to an arms race among species.
- ▶ Competing species must evolve advantageous adaptations or face extinction.
- ▶ The Red Queen Effect: running as fast as possible to stay in the same place.

Example:

- ▶ Predators and prey constantly evolve to outcompete each other.

Ecosystems

- ▶ Ecosystems: groups of organisms coexisting with the natural world.
- ▶ Diverse life forms take on different survival approaches.
- ▶ Social systems can be seen as ecosystems.
- ▶ Similar pressures lead to varying behaviors in both.
- ▶ Understanding ecosystems helps in understanding social dynamics.

Example:

- ▶ Business ecosystems with competing companies and consumers.

Niches

- ▶ Organisms find a niche: a method of competing and surviving.
- ▶ Species select niches for which they are best adapted.
- ▶ Multiple species competing for the same niche can cause extinction.
- ▶ Limited resources drive niche competition.
- ▶ Understanding niches helps in strategic positioning.

Example:

- ▶ Different companies targeting specific market segments.

Self-Preservation

- ▶ Self-preservation instinct is strong in all organisms.
- ▶ Without it, organisms would tend to disappear over time.
- ▶ Self-preservation can cause violent, erratic, and destructive behavior.
- ▶ Cooperation is also important but secondary to self-preservation.
- ▶ Recognizing self-preservation instincts helps predict behaviors.

Examples:

- ▶ Animals defending their territory.
- ▶ Human survival instincts in dangerous situations.

Replication

- ▶ High-fidelity replication is a fundamental building block of life.
- ▶ DNA provides a blueprint for offspring.
- ▶ Various replication methods: sexual and asexual.
- ▶ Replication ensures the continuation of species.
- ▶ Understanding replication helps in genetics and breeding.

Examples:

- ▶ Bacteria replicating asexually.
- ▶ Plants reproducing through seeds.

Cooperation

- ▶ Cooperation is as important as competition in biological systems.
- ▶ The cooperation of a bacterium and a cell created the first complex cell.
- ▶ No group survives without cooperation.
- ▶ Cooperation gives rise to complex organizational structures.
- ▶ The Prisoner's Dilemma illustrates the importance of cooperation.

Examples:

- ▶ Symbiotic relationships in nature.
- ▶ Teamwork in human organizations.

Hierarchical Organization

- ▶ Complex organisms often organize hierarchically.
- ▶ Humans feel the hierarchical instinct strongly.
- ▶ The Stanford Prison Experiment showed human bias towards authority.
- ▶ Leaders have a responsibility to act well.
- ▶ Hierarchies provide structure and order in social systems.

Examples:

- ▶ Corporate organizational structures.
- ▶ Social hierarchies in animal groups.

Incentives

- ▶ All creatures respond to incentives to stay alive.
- ▶ Constant incentives lead to consistent behavior.
- ▶ Human incentives can be hidden or intangible.
- ▶ Understanding incentives helps in predicting behaviors.
- ▶ The rule of life is to repeat what is rewarded.

Examples:

- ▶ Employees working harder for bonuses.
- ▶ Animals hunting for food.

Tendency to Minimize Energy Output

- ▶ Organisms minimize energy usage for survival.
- ▶ Wasteful energy usage is a disadvantage.
- ▶ Behavior is governed by minimizing energy usage.
- ▶ Efficient energy usage ensures better survival chances.
- ▶ Understanding this tendency helps in optimizing processes.

Examples:

- ▶ Animals conserving energy during hibernation.
- ▶ Streamlining business operations to reduce costs.

Systems Thinking Mental Models

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Feedback Loops

- ▶ Complex systems are subject to positive and negative feedback loops.
- ▶ A causes B, which influences A, creating higher-order effects.
- ▶ Homeostatic systems use feedback loops to maintain balance (e.g., human body temperature).
- ▶ Runaway feedback loops describe self-catalyzing reactions.

Examples:

- ▶ Receiving feedback on a presentation, reflecting on areas for improvement, and making adjustments for the next presentation.
- ▶ Adjusting study techniques based on feedback from exam results to improve future performance.

Facilitating Growth

- ▶ Continuous cycle of learning and adaptation through receiving, reflecting, and adjusting.
- ▶ Enables refinement of approaches, behaviors, and decisions

Equilibrium

- ▶ Homeostasis is the process of self-regulation to maintain equilibrium.
- ▶ Systems often over or undershoot and must keep adjusting.
- ▶ Everything within a system contributes to maintaining equilibrium.
- ▶ Understanding the range of equilibrium is crucial.

Examples:

- ▶ Body's response to temperature changes.
- ▶ Economic market stability.

Bottlenecks

- ▶ A bottleneck stops the flow, constraining movement.
- ▶ A small bottleneck can have a large impact if in the critical path.
- ▶ Bottlenecks can inspire alternative pathways to success.

Examples:

- ▶ Production process delays.
- ▶ Traffic jams on critical routes.

- ▶ Systems are sensitive to scale.
- ▶ Properties and behaviors change when scaled up or down.
- ▶ Always quantify the scale when observing or analyzing systems.

Examples:

- ▶ Business operations from startup to enterprise.
- ▶ Ecological impacts from local to global.

Margin of Safety

- ▶ Engineers add a margin for error into calculations.
- ▶ A margin of safety prevents failures in unknown conditions.
- ▶ Robust margins lead to better long-term outcomes.

Examples:

- ▶ Structural engineering standards.
- ▶ Financial investment strategies.

Churn

- ▶ Churn is the slow leak of customers or users.
- ▶ It can be hidden, unlike sudden crises.
- ▶ Some churn is inevitable and can present opportunities for improvement.

Examples:

- ▶ Customer turnover in businesses.
- ▶ Staff turnover in organizations.

Algorithms

- ▶ Algorithms are step-by-step processes for specific outcomes.
- ▶ They filter noise and focus on signals.
- ▶ Thinking algorithmically means finding reliable processes.

Examples:

- ▶ Manufacturing processes.
- ▶ Software development routines.

Critical Mass

- ▶ Critical mass is when a system shifts from slow to explosive growth.
- ▶ It is the tipping point for self-sustaining reactions.
- ▶ Understanding critical mass helps design and implement changes.

Examples:

- ▶ Viral marketing campaigns.
- ▶ Social movements gaining momentum.

Emergence

- ▶ Emergence is when combinations create new properties.
- ▶ New results are more than the sum of parts.
- ▶ Acknowledge and leverage emergent properties.

Examples:

- ▶ Innovation from diverse teams.
- ▶ Ecosystems developing new traits.

Irreducibility

- ▶ Irreducibility is about the essence that can't be broken down.
- ▶ Emergent properties arise from complex systems.
- ▶ Focus on the big picture and embrace complexity.

Examples:

- ▶ Cultural phenomena.
- ▶ Organizational behaviors.

Law of Diminishing Returns

- ▶ Initial efforts yield the most gains.
- ▶ Further optimization requires more effort for less gain.
- ▶ Allocate resources where they have the biggest impact.

Examples:

- ▶ Agricultural productivity.
- ▶ Efficiency improvements in operations.

Numeracy Mental Models

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Distributions

- ▶ Normal distribution leads to the bell curve, with a central average.
- ▶ Many processes, especially in social systems, do not follow this pattern.
- ▶ Contrast with power law distributions.

Examples:

- ▶ Human height and weight.
- ▶ Economic wealth distribution.

Compounding

- ▶ Exponential growth from small consistent gains over time.
- ▶ Long-term thinking about knowledge, experiences, and relationships.
- ▶ The majority of success comes from steady, patient accumulation of efforts.

Examples:

- ▶ Financial investments.
- ▶ Personal development.

Sampling

- ▶ Extracting information about a population by studying a sample.
- ▶ More measurements lead to more accurate results.
- ▶ Small sample sizes can produce skewed results.

Examples:

- ▶ Opinion polls.
- ▶ Quality control in manufacturing.

Randomness

- ▶ Many events are random, non-sequential, and non-ordered.
- ▶ Human tendency to attribute causality to random events.
- ▶ Course-correct for the fooled-by-randomness effect.

Examples:

- ▶ Stock market fluctuations.
- ▶ Weather patterns.

Regression to the Mean

- ▶ Long deviations from average tend to return to that average.
- ▶ Often mistaken for causal relationships.
- ▶ Be cautious not to confuse statistically likely events with causal ones.

Examples:

- ▶ Sports team performance.
- ▶ Medical treatments.

Multiplying by Zero

- ▶ Multiplying any number by zero results in zero.
- ▶ A failure in one area can negate efforts in other areas.
- ▶ Fixing the "zero" often has a greater effect than enlarging other areas.

Examples:

- ▶ Project management failures.
- ▶ Organizational efficiency.

Equivalence

- ▶ Algebra demonstrates that two seemingly different things can be the same.
- ▶ Manipulating symbols to show equivalence led to engineering advancements.
- ▶ Understanding algebra basics is crucial for various results.

Examples:

- ▶ Engineering design equations.
- ▶ Financial modeling.

Surface Area

- ▶ Surface area is the space on the outside of a three-dimensional object.
- ▶ More surface area means more contact with the environment.
- ▶ Desirable in some situations but not in others.

Examples:

- ▶ Biological structures like lungs and intestines.
- ▶ Cybersecurity strategies.

Global and Local Maxima

- ▶ Maxima and minima are the largest and smallest values of a function.
- ▶ Global maxima vs. local maxima help identify peaks and potential.
- ▶ Sometimes, going down is necessary to go back up.

Examples:

- ▶ Optimization problems in mathematics.
- ▶ Business performance analysis.

Microeconomics Mental Models

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Opportunity Costs

- ▶ Doing one thing means giving up another.
- ▶ Living in a world of trade-offs.
- ▶ Summarized as "there is no such thing as a free lunch."

Examples:

- ▶ Choosing between work and leisure.
- ▶ Allocating time between different activities.

Creative Destruction

- ▶ Coined by economist Joseph Schumpeter.
- ▶ Describes the capitalistic process in a free-market system.
- ▶ Entrepreneurs push to best one another, destroying old ideas and replacing them with newer technology.

Examples:

- ▶ Evolution of technology.
- ▶ Disruption of traditional industries by startups.

Comparative Advantage

- ▶ Introduced by economist David Ricardo.
- ▶ Two entities can benefit from trading even if one is better at everything.
- ▶ Applied opportunity cost.

Examples:

- ▶ International trade agreements.
- ▶ Outsourcing in business.

Specialization (Pin Factory)

- ▶ Introduced by economist Adam Smith.
- ▶ Advantages gained in a free-market system by specialization.
- ▶ Each worker specializing in one aspect of production.

Examples:

- ▶ Division of labor in manufacturing.
- ▶ Professional specialization in career fields.

Seizing the Middle

- ▶ Strategy of controlling the middle for maximum potential moves and control.
- ▶ Demonstrated by historical business successes like Rockefeller and Microsoft.

Examples:

- ▶ Strategic positioning in competitive markets.
- ▶ Market dominance through innovation.

Trademarks, Patents, and Copyrights

- ▶ Protect creative work, promoting the creative-destruction model of capitalism.
- ▶ Provide incentives for innovation and creativity.

Examples:

- ▶ Patenting new inventions.
- ▶ Registering trademarks for brand protection.

Double-Entry Bookkeeping

- ▶ Introduced in the 14th century.
- ▶ Acts as a check on potential accounting errors.
- ▶ Allows for accurate records and behavior by firm owners.

Examples:

- ▶ Financial accounting in businesses.
- ▶ Budgeting and financial planning.

Utility (Marginal, Diminishing, Increasing)

- ▶ Marginal utility: value of one additional unit.
- ▶ Diminishing marginal utility: utility diminishes with additional units.
- ▶ Some cases exhibit critical points where utility function jumps.

Examples:

- ▶ Consumption of goods and services.
- ▶ Decision-making in resource allocation.

Bribery

- ▶ Often ignored in mainstream economics.
- ▶ Central to human systems, neutralizing rule enforcers.
- ▶ Seen as a form of arbitrage.

Examples:

- ▶ Corruption in government.
- ▶ Influence in business transactions.

Arbitrage

- ▶ Profitably exploiting price differences in different markets.
- ▶ Utilized in various industries for financial gain.

Examples:

- ▶ Currency arbitrage in forex markets.
- ▶ Price differentials in global commodities markets.

Supply and Demand

- ▶ Basic equation of economic life: limited supply, competition for goods.
- ▶ Equilibrium point: supply and demand are equal.
- ▶ Dynamic and changing in practical life.

Examples:

- ▶ Pricing of goods and services.
- ▶ Market responses to changes in supply and demand.

Scarcity

- ▶ Describes situations of conflict, limited resources, and competition.
- ▶ Decisions based on limited resources and time.
- ▶ Traditional game theory may overestimate human rationality.

Examples:

- ▶ Allocation of resources in a business.
- ▶ Policy decisions in government.

Mr. Market

- ▶ Introduced by investor Benjamin Graham.
- ▶ Represents the vicissitudes of the financial markets.
- ▶ Investor's job is to take advantage of market fluctuations.

Examples:

- ▶ Stock market investments.
- ▶ Timing of buying and selling assets.

Conclusion

- ▶ Mental models in microeconomics provide insights into economic behavior and decision-making.
- ▶ Understanding these models can inform strategic planning and resource allocation.
- ▶ Application of these models can lead to better outcomes in business and personal finance.

Military/War Mental Models

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Seeing the Front

- ▶ Personally observing the situation instead of relying solely on reports and advisors.
- ▶ Provides firsthand information and improves quality of secondhand information.
- ▶ Leaders benefit from "seeing the front" before making decisions.

Examples:

- ▶ A general visiting troops on the battlefield.
- ▶ A CEO touring production facilities and talking to workers.

Asymmetric Warfare

- ▶ Weaker side uses unconventional or guerilla tactics against a stronger opponent.
- ▶ Creates disproportionate fear or impact relative to their limited resources.

Examples:

- ▶ Insurgency using terrorism against a conventional military force.
- ▶ A startup disrupting an established industry through innovative strategies.

Two-Front War

- ▶ Fighting on multiple fronts divides and weakens the impact on each front.
- ▶ Applicable in organizational conflicts and competition.

Examples:

- ▶ Germany fighting on Eastern and Western fronts in World War II.
- ▶ A company facing competition from rivals and internal disputes simultaneously.

Counterinsurgency

- ▶ Strategies to combat asymmetric warfare and insurgencies.
- ▶ Tit-for-tat leads to a feedback loop of insurgency and counterinsurgency tactics.

Examples:

- ▶ General Petraeus' tactics against insurgents in Iraq.
- ▶ A company adopting defensive measures against disruptive competitors.

Mutually Assured Destruction

- ▶ Strengthening opponents may decrease the likelihood of conflict.

Examples:

- ▶ Nuclear powers avoiding direct confrontation due to fear of catastrophic consequences.
- ▶ Companies refraining from price wars to avoid harming the industry.

Human Nature and Judgment Models

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- ▶ Modern world operates on trust (familial, professional, etc.)
- ▶ Trusting system tends to work efficiently
- ▶ Rewards of trust are extremely high

Examples:

- ▶ Trusting family members from a young age
- ▶ Trusting service providers (chefs, clerks, drivers, etc.)

Bias from Incentives

- ▶ Humans are highly responsive to incentives
- ▶ Incentives can distort thinking in self-interest
- ▶ Example: Salesperson believing their product improves lives

Examples:

- ▶ Salespeople promoting their products
- ▶ Professionals justifying high fees for their services

Pavlovian Association

- ▶ Humans can respond to associated objects, not just direct incentives
- ▶ Positive and negative emotions towards intangible objects

Examples:

- ▶ Feeling hungry when seeing food advertisements
- ▶ Feeling anxious when exposed to certain sounds or smells

Envy & Jealousy

- ▶ Tendency to feel envious of those receiving more
- ▶ Desire to "get what is theirs" can drive irrational behavior
- ▶ Envy is an old and powerful human trait

Examples:

- ▶ Envy towards colleagues who receive promotions or raises
- ▶ Jealousy in personal relationships

Liking/Disliking Bias

- ▶ Tendency to distort thinking based on liking or disliking
- ▶ Overrating things we like, underrating things we dislike
- ▶ Missing crucial nuances in the process

Examples:

- ▶ Favoring a sports team or political party
- ▶ Disliking a particular ethnicity or culture

Thanks ...

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