

Institutional & Organizational Economics Academy

# Contracts, Perceptions, and Behavior

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**HEC Lausanne** 

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# Conflicts: A Double-Edged Sword

- Interpersonal conflicts in the work context are frequent and widespread
  - Employees report having conflicts on half of their workdays (Hahn 2000)
- Conflicts are costly
  - Conflicts are associated with an increase in counterproductive behavior (Hershcovis et al. 2007)
  - Estimated to cost organizations billions of dollars each year (U.S. Chamber of Commerce 2002)
- (Threats of) Conflicts can help initiate and sustain cooperation
  - Sanctions among peers enhance the provision of public goods (Fehr & Gaechter 2000)
- Important to establish a "healthy conflict culture"
  - 1) Agreement on what appropriate behavior is
  - 2) Credible threat that misbehaviors are sanctioned

Effects of Punishment (Threats) (Fehr & Gächter 2000)



# Organizational Conflicts?

• Conflict (Oxford Dictionary):

A serious disagreement or argument / a serious incompatibility between two or more opinions, principles, or interests.

• Conflict Behavior (Oxford Research Encyclopedia of Psychology):

The behavioral response to the experience of conflict (Van de Vliert et al. 1995). Conflict behavior is defined as one party's reaction to the perception that one's own and the other party's current aspiration cannot be achieved simultaneously (Deutsch 1973; Pruitt 1981; Rubin et al. 1994).

- The way I will operationalize conflicts in my lecture:
  - Source of conflict:
    A perceived (!) misbehavior of an interaction partner
  - The consequence of conflict: Retaliation in the form of inefficient, counterproductive behavior (punishment / refusal to cooperate)

#### Counterproductive Behavior

- Mild forms
  - Wasting time
  - Withholding information
  - Lack of cooperation
  - Failure to provide support
- Severe forms
  - False accusations
  - Sabotage
  - Psychological harassment
  - Violence

# Emergence of Conflicts

- Conflicts emerge if people feel that somebody else misbehaves
- Some conflicts are hard to avoid and might even be necessary
  - Conscious violations of social norms or neglect of obligations
  - Fundamental disagreements (different priorities etc.)
- But many conflicts are unnecessary, because they result from misunderstandings
  - Misinterpretations of others' behavior
  - Conflicting social norms
  - Misaligned expectations

#### Equilibration Framework (Gibbons, Grieder, Herz and Zehnder 2021)



# The Role of Negative Reciprocity (Hart & Moore 2008)

- Variables
  - $\pi$ : Realized payoff
  - r: Payoff party feels entitled to (reference point)
  - a: Aggrievement (a =  $\pi$  r)  $\rightarrow$  lack of equilibration
  - $\theta$ : Psychological cost of one unit of aggrievement
  - σ: Counterproductive behavior (sanction / punishment / retaliation)
- Utilities when equilibration fails:
  - $U_A = \pi_A \theta a_A$
  - $U_B = \pi_B \theta a_B$
- The effect of counterproductive behavior (De Quervain et al. 2004 → "sweet taste of revenge"):
  - $U_A = \pi_A \sigma_B \max\{\theta a_A \sigma_A, 0\}$
  - $U_B = \pi_B \sigma_A \max\{\theta a_B \sigma_B, 0\}$

#### Outline of the Lecture

- 1) Contracts as Reference Points (Fehr, Hart & Zehnder 2009, 2011, 2015, 2020)
  - Avoiding unnecessary conflicts by managing expectations through contract design
- 2) Building a Conflict Culture (MacLeod, Valle Lara & Zehnder 2023)
  - Coordinating conflicts to turn them into an enforcement device in a challenging environment
- 3) Clarity in Relational Contracts (Gibbons, Grieder, Herz & Zehnder 2021)
  - Reducing misunderstandings using principle-based agreements

#### Laboratory Experiments

- Real decision with real consequences
- **BUT:** Experimenter controls decision environment
- Excellent tool for:
  - Testing behavioral relevance of theoretical mechanisms
  - Disentangling channels through which effects operate
- Unsuited for:
  - Measuring effects sizes
  - Establishing real-world relevance





#### Contracts as Reference Points (Hart & Moore 2008)

- Expectation management through contract design
  - If conflicts emerge, because of misaligned expectations (lack of equilibration) ...
    - ... and parties engage in retaliation, if they gets less than they feel entitled to

> Contracts can play important an important role

- Not only define rights and obligations (traditional view)
- But also define reference points for fairness evaluations (behavioral view)
- (Seemingly excessive) rigidity might help
  - Limiting the set of possible outcomes reduces the scope for misalignment
  - May entail an efficiency cost (adaptation to realized state limited)

# Setting

- Buyer-Seller Relationship with Voluntary Trade (Agreement to Agree)
- Uncertainty and Incomplete Contract
  - There is uncertainty about the state (cost and/or value of the widget not clear)
  - State-contingent contracts are not feasible
- Fundamental Transformation (Williamson 1975, 1985)
  - The parties meet on a competitive market, but get locked into a bilateral monopoly once the contract is concluded (ex-ante competition adds objectivity → contract as reference point)
- Reference Point?
  - Self-serving bias: each party hopes for their preferred outcome permitted by the contract

#### Timeline: Interaction of Buyer & Seller



#### Experiment (Fehr, Hart & Zehnder 2011)

- Market setup (in each experimental session):
  - 28 market participants: 14 buyers and 14 sellers
  - Interaction groups of 4 participants: 2 buyers and 2 sellers
  - 15 periods (random re-matching in every period)
- Competition:
  - Each buyer can buy at most 1 unit per period
  - Each seller can sell at most 2 units per period
- States of nature ( $\sigma$ ):
  - Good state ( $\sigma = g$ ): seller's costs are low  $\rightarrow$  Prob( $\sigma = g$ ) = 0.8
  - Bad state ( $\sigma = b$ ): seller's costs are high  $\rightarrow$  Prob( $\sigma = b$ ) = 0.2
- Sellers' performance levels (q):
  - Normal quality  $(q = q^n)$
  - Low quality (q = q') ( $\rightarrow$  counterproductive behavior / punishment)

#### Parameters

• Seller's production costs conditional on state of nature

Good State:	Bad State:

- $c(q^n,g) = 20$   $c(q^n,b) = 80$
- c(q',g) = 25 c(q',b) = 85
- Buyer's valuation of the product
  - $v(q^n) = 140$
  - v(q') = 100
- No trade payoffs (can be earned ex-ante or ex-post)
  - Buyer:  $x_B = 10$
  - Seller:  $x_s = 10$

#### **Decision Sequence**

- 1) Contract: Buyers choose flexible or rigid contract
- 2) Contract is auctioned off to sellers
  - Rigid contract: Final price
  - Flexible contract: Lower bound for price
- 3) Nature chooses seller's cost level (high or low)
  - Rigid contract: Trade only feasible if cost is low
  - Flexible contract: Trade always possible (flex. price)
- 4) Buyer picks final price
  - Rigid contract: No choice
  - Flexible contract: Any price in the price range covering the seller's cost
- 5) Sellers determine the quality of the traded good
  - Seller has two options: normal quality or low quality
  - Lowering the quality from normal to low is slightly costly (costly retaliation)

# Prediction: Trade-off between Rigidity and Flexibility

- Flexible Contracts ( $p \in [p_L, v(q_n)]$ )
  - Guarantee trade
  - But misaligned feelings of entitlement lead to conflicts:
    - Sellers hope for high prices
    - Buyers would like to choose low prices
    - Sellers can initiate a conflict if unhappy about the price choice (low quality)
- Rigid Contracts (p = p<sub>F</sub>)
  - Alignment of expectations (competitively determined fixed price): few conflicts
  - But trade is not feasible in the bad state
- If conflicts are inefficient enough, buyers will choose rigid contracts

# Trade-off btw. Rigidity and Flexibility



#### Comparative Statics: Reduced Flexibility

- So far (baseline): completely rigid contracts with maximally flexible contracts
- Extreme cases give us the best chance to illustrate the existence of the trade-off
- Theory: buyers prefer less flexibility, because less flexibility reduces shading
- New treatment: flexible contract with minimal flexibility to guarantee trade:
  - We lower the upper bound of the price range from 140 to 95
- Everything else remains exactly as in the baseline treatment
- **Prediction:** fewer conflicts in flexible contracts

#### Effects of Reduced Flexibility



# Renegotiation & Informal Agreements (Fehr, Hart & Zehnder 2015)

- Our first experiment abstracts from (potentially) important real-life aspects:
  - Renegotiation
    - What if the parties can renegotiate the initial contract?
    - Why should contracts constitute reference points if they can be renegotiated anyways?
    - > Treatment: Buyer can always unilaterally change the contract.
  - Informal Agreements
    - Wouldn't communication allow aligning reference points?
    - If so, flexibility with managed reference points might dominate rigidity
    - > Treatment: Buyer can make state-contingent price announcements for flexible contracts

#### Renegotiation



#### Renegotiation – Effects of Renegotiation



#### Informal Agreements



Communication (Fehr, Hart & Zehnder 2020)

- Two-way, free-form communication
  - Potential positive effects:
    - Ex-ante expectations management
    - Ex-post damage control
  - Potential negative effects:
    - Influence activities
- New Experiment
  - Participants have access to a chat technology throughout the experiment
  - The technology works like a phone, but the conversation is written

# Communication – Price Distribution in Flexible Contracts



# Communication



# Summary: Managing Expectations Through Contract Design

- Contract design can be a powerful tool to manage expectations
  - Fewer options reduce the scope for misaligned expectations
  - Effects can be systematically manipulated (less flexibility, elimination of competition)
  - Effects are robust to the presence of:
    - Renegotiation
    - Informal Agreements
    - Free-form communication
- Future Research?
  - Effective Communication: Guiding Principles (Frydlinger & Hart 2022)



# Building a Conflict Culture (MacLeod, Valle Lara & Zehnder 2023)

- We know that (the threat of) conflicts can boost cooperation
- Previous literature: situations with complete and symmetric information
  - Misaligned expectations are not a major problem: it is clear what cooperation means
- Organizational settings are typically more complex (MacLeod 2003)
  - Performance is neither contractible nor perfectly observable (subjective evaluations)
  - There are multiple possible fairness standards
  - Incentive compatibility may require actual conflicts (not only threats)
- Research question: How to build a "healthy conflict culture" in such a setting?

#### The Setting



### Choice Sequence and Parameters

- Step 1: Worker's effort choice:  $e \in \{e^L, e^H\}$ 
  - Low effort  $(c(e^{L}) = 0)$  or high effort  $(c(e^{H}) = 10)$
- Step 2: Stochastic output:  $y \in \{y^L, y^H\}$ 
  - Low output  $y^{L} = 150$  / High output  $y^{H} = 350$
  - Prob(y<sup>L</sup>|e<sup>L</sup>) = Prob(y<sup>H</sup>|e<sup>H</sup>) = 0.85
- Step 3: Subjective signals: sP, sA  $\in$  {-, +}
  - Principal:  $Prob(s_P = -|y^L) = Prob(s_P = +|y^H) = 0.75$
  - Worker:  $Prob(s_A = -|s_P = -) = Prob(s_A = +|s_P = +) = 0.75$
- Step 4: Principal's bonus choice:  $b \in \{0, 50\}$ 
  - Compensation: w + b, where w = 100
- Step 5: Worker's choice to engage in conflict:  $p \in \{0, 1\}$ 
  - Worker's cost: c(p) = 10p
  - Damage inflicted on principal: d(p) = 100p



# "Theory" – Intuition for Enforcement Device

- Self-interest: Low effort equilibrium (no conflicts, no bonuses)
- Social preferences can be a commitment device
  - Perceived unfairness may induce conflicts
  - Threat of conflicts  $\rightarrow$  principals pay the bonus  $\rightarrow$  even selfish workers may work hard
- What is the fairness norm used to evaluate outcomes?
  - Pay-for-input?
  - Pay-for-output?

#### Two Salient Fairness Norms

#### Pay-for-input norm (PI): Rewarding high effort

- Fair-mind workers feel entitled to be compensated for high effort
- Conflict is initiated if no bonus is received after choosing high effort
- Gift-Exchange: worker chooses high effort / principal pays the bonus
- Problem: principal cannot observe worker's gift

#### Pay-for-output norm (PO): Rewarding high return

- Fair-mind workers feel entitled to be compensated for high return
- Conflict is initiated if positive subjective signal is observed but no bonus received
- Performance Pay: bonus if principal's signal indicates high return
- Problem: worker and principal may have contradicting signals

### Coordination Problem

- Existence of multiple norms creates two potential problems
  - Miscoordination: Conflicting information may trigger conflicts
  - Coordination on "wrong" norm: Conflicts do not provide proper motivation
- Pay-for-input norm (PI)
  - Fair-minded workers provides high effort and initiate conflict if no bonus
  - Principals pay bonus irrespective of signal
  - Advantage: No conflict occurs
  - Problem: selfish workers will provide low effort
- Pay-for-output norm (PO)
  - Fair-minded workers provides high effort, but they only initiate conflict if the subjective signal is positive and no bonus is received
  - Principals pay bonus if subjective signal indicates high return
  - Problem: conflicts occur with positive probability (contradicting signals)
  - Advantage: induces monetary incentives for selfish workers to work hard

#### Experiment

- What does it take to get people coordinated on the PO norm?
- Series of laboratory experiments
  - Baseline Game is implemented without any coordination device
  - Communication Participants can announce their strategy
  - Code of Conduct Participants sign up to PO norm
  - Grievance Procedure Institutionalized Conflict
#### Baseline: Frequency of Conflict (in %)



### Baseline: Conflicts (only no bonus cases)



#### Baseline: Frequency of Bonus Payments (in %)



### Baseline Frequency of High Effort (in %) and Surplus



#### Structured Communication

- Participants can pick a message from a pre-defined set of messages before they interact with their partner
- Principal
  - I will pay the bonus with certainty. (13%)
  - I will pay the bonus with high probability. (9%)
  - I will pay the bonus if I have the impression that you exerted high effort. (51%)
  - I pay the bonus if my private information indicates a high return. (26%)
  - I will not pay the bonus. (0%)
  - I prefer not to send a message. (1%)

#### Structured Communication

- Participants can pick a message from a pre-defined set of messages before they interact with their partner
- Worker:
  - I will exert high effort. (81%)
  - I will exert low effort. (15%)
  - I prefer not to send a message. (4%)
  - I will always reduce the return. (0%)
  - I will reduce the return if I do not get the bonus. (56%)
  - I will reduce the return if I do not get the bonus although I got a good signal. (22%)
  - I will never reduce the return. (17%)
  - I prefer not to send a message. (5%)

#### Baseline vs. Communication: Conflicts (only no bonus cases)



### Communication: Frequency of High Effort (in %) and Surplus



#### Code of Conduct

- Participants "sign" a pre-defined "code of conduct" before they interact with their partner
- The code of conduct includes the following points:
  - The worker provides high effort
  - The principal pays the bonus if the principal's subjective signal is high
  - The worker only engages in conflict if no bonus is paid although the worker's subjective signal is high
- The code of conduct is not-binding for the parties: the choice set is unaffected by the "signature"

### Code of Conduct: Frequency of High Effort (in %) and Surplus



#### Grievance Procedure

- Participants "sign" the same pre-defined "code of conduct" before they interact with their partner
- Workers who are unhappy need to "file a complaint" in which they explicitly confirm that they did not get a bonus although their subjective signal was positive
- Pure re-framing: a complaint has the same consequences as a conflict

#### Baseline vs. Grievance: Conflicts (only no bonus cases)



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#### Grievance: Frequency of Bonus Payments (in %)



#### Grievance: Frequency of High Effort (in %) and Surplus



#### Summary: Building a Conflict Culture

- Establishing a healthy conflict culture is difficult, because it requires coordination on the "right" fairness norm
- Even in the lab (where things are simpler than in reality) quite strong institutions are needed
- Institutionalizing conflict seems to make the "desired" norm more salient
- A good conflict culture can enhance efficiency, but it needs to be managed → a "laisser-faire" policy may backfire

#### Clarity in Relational Contracts (Gibbons, Grieder, Herz & Zehnder 2021)

- In some cases, adaptation cannot be avoided (rigidity is not a solution)
- Many interaction environments are complex and change importantly over time
  - which actions (under which circumstances) constitute "cooperation"?
  - which actions (under which circumstances) constitute "defection"?
  - what should happen in (and after) grey area?
- Clarity Problem: do we have a shared understanding? (Gibbons & Henderson 2012)
- Research question: How to build a relational contract that solves the dual problem
  - Credibility problem: should I believe the promise you are making?
  - Clarity problem: do I know what exactly you are promising?

#### Setting and Hypothesis



#### Hypothesis:

# In a world with unpredictable change, **agreements based on a general principle** (rather than a specific rule) achieve better performance

#### Theoretical Framework



#### **Empirical Strategy**



#### Experiment Design: Trading Phase 1

- 5 periods
- Payoff of the buyer:  $\pi_B = 10q p$
- Payoff of the seller:  $\pi_s = p c(q)$

Seller's (	Cost F	unction:
------------	--------	----------

q	0	1	2	3	4	5	6	7	8	9	10
c(q)	0	1	3	6	9	13	18	23	28	33	40

• q = 10 is efficient

• P = 70 implements an equal split of rents conditional on q = 10

### Experiment Design: Scenarios and Trading Phase 2

- Subjects see 3 scenarios with different shocks to the game
  - S1: Higher value and outside option
  - S2: Fluctuating value of the product
  - S3: Higher value and risk of transfer loss
- Incentivized questions on shared understanding, behavior and beliefs:
  - According to the agreement, which quality *should* the seller provide?
  - According to the agreement, which price *should* the buyer pay?
  - Which quality *will* the seller provide?
  - Which price *will* the buyer pay?

#### Normative Consensus, Normative-Behavioral Consistency, Equilibration

## Baseline: Building Blocks of Efficient Equilibration



- Theory: NBC and ENC are neither necessary nor sufficient for EE
- Data: NBC and ENC are sufficient and nearly necessary for EE

#### Baseline: Principles Correlate (!) with Performance



#### Baseline: Efficient Equilibration



- Pairs with principle-based agreements significantly more likely to be efficiently equilibrated
- Efficient (pre-shock) equilibration significantly predicts (post-shock) performance

#### Causal Effects: The Nudge Treatment



## Nudge

- Attempt to exogenously induce pairs to write principle-based agreements:
  - We add three sentences to the instructions
  - The same sentences appear on subjects' screens in the chat phase

While writing your agreement, note that the situation that you will encounter in part 2 of the study is still unknown. It can therefore be useful to not only consider part 1 of the study, which you already know, but also the second part, which you don't know. For example, you could think about principles based on which you and the buyer should generally act during this study.

#### Manipulation Check: Coding Data



- In the Baseline, 30% of pairs formulate principles
- In the Nudge, 85% of pairs formulate principles

#### Causal Effects: Long-Run Performance



But the Nudge does significantly

- increase NBC
- increase EE on quality

- The Nudge did not significantly increase long-run performance
- Observed PBA and RBA both worse in Nudge (but many more Principles in Nudge)

#### Summary: Clarity in Relational Contracts

- Pairs who endogenously come up with a principle-based agreement achieve
  - better shared understanding in scenarios *before* shock
  - better long-run performance (on average) *after* shock
- With Nudge, causal effect for efficient equilibration on quality, not price
  - efficient quality is objective
  - fair price is subjective? (clarity?)

➢In the lab (as in life), efficient relational contracts difficult to build (consistent with performance advantage) (Barney, 1986)

# Thank you!

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# Appendix

### Remarks about Equilibration (aligned expectations)

- Reaching a normative consensus does not imply efficiency
  - People can agree that inefficient choices are appropriate
- Strictly speaking, normative consensus and normative-behavioral consistency are neither necessary nor sufficient conditions for equilibration
  - Not necessary: People can meet their partners expectations without having reached agreement on what ought to be done
  - Not sufficient: People might (for some reason) expect others to deviate (go beyond) the behavior defined by the normative consensus
- But in most plausible cases normative consensus and normative-behavioral consistency are important building blocks to reach equilibriation

#### Summary Statistics

Contract Type	Rigid Contract		Flexible	Contract
State of Nature	Good	Bad	Good	Bad
Average Price	40.7	-	51.1	98.4
Rel. Freq. of Shading	0.06	-	0.25	0.30
Average Auction Outcome	40	40.7 40.2		.2
Average Profit Buyer (per state)	96.8	10	78.9	29.7
Average Profit Seller (per state)	20.4	10	29.8	16.9
Average Profit Buyer (over both states)	77	.9	68	.9
Average Profit Seller (over both states)	18.1 27.2			.2
Rel. Freq. of Contract	0.5	50	0.5	50

Table 2: Summary of Outcomes in Rigid and Flexible Contracts (Baseline)

#### Price Effects

Dependent Variable	Shading	$[\sigma = g]$	Shading $[\sigma = b]$		
	OLS Probit [ME]		OLS	Probit [ME]	
	(1)	(2)	(3)	(4)	
	_	_			
Price increment	0.000	0.000	-0.013*	-0.023***	
	[0.002]	[0.004]	[0.005]	[0.009]	
Flexible contract	0.335***	0.298***			
	[0.060]	[0.060]			
Price inc. x Flex	-0.009*	-0.009*			
	[0.004]	[0.005]			
Constant	0.064***		0.343***		
	[0.025]		[0.075]		
Observation	805	805	104	104	
$R^2$	0.13		0.03		

Table 3: Price Dependence of Quality Across Contract Types (Baseline)

#### Elimination of Ex-Ante Competition (Fehr, Hart & Zehnder 2009)

- Studying the role of the fundamental transformation
- Identical to the baseline treatment except for the price determination
- Instead of competitive auctions, the contract terms are exogenously fixed
  - Before the buyer chooses the contract type, he is assigned a "basis price"
  - The role of the basis price depends on his contract choice
    - In rigid contracts the basis price defines the fixed price
    - In flexible contracts the basis price becomes the lower bound
  - To make sure that our results are not driven by differences in the price level, we draw the basis prices out of the empirical distribution of auction outcomes in the baseline treatment
- Prediction: more conflicts in rigid contracts
# Elimination of Competition



### Baseline: Principles and Building Blocks



• Pairs with principles: not significantly more ENC, but significantly more NBC

#### Causal Effects: NC, NBC, EE



- The Nudge significantly increased NBC (p < 0.05) but not ENC
- The Nudge did not significantly increase efficient equilibration

## Causal Effects: Quality vs. Price



- On quality: the Nudge significantly increased EE and NBC (p < 0.05)
- On price: the Nudge did not increase equilibration or NBC

# Nudge: Performance & Equilibration on Price



- Data: all pairs that achieved efficient equilibration on quality in the Nudge
- Those pairs who also reach price equilibration perform substantially better