Constraint-Based Context Design for Authentic AI Communication

A Case Study on Focused Contexts, Creative Emergence, and Practical Applications for Organizations

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Executive Summary

This case study documents an experiment to improve AI output quality through deliberately limited contexts. By restricting a Large Language Model (LLM) to a coherent but narrow knowledge domain, a complete creative work with consistently maintained tone and exceptional depth emerged in 60 minutes.

Core Insights:

- Focused contexts generate more coherent, authentic output than broad knowledge bases
- Creative constraints foster depth over breadth
- The method is transferable to business communication
- Less is often more: Limited data basis prevents generic standard responses

Relevance for Organizations: These insights have direct applications in customer communication, content marketing, internal communication, and anywhere AI should communicate authentically within a specific organizational culture.

1. The Challenge: The Problem of Diluted AI Outputs

1.1 The Initial Situation

In daily work with Large Language Models like ChatGPT or Claude, a growing problem emerged: the more topics discussed in a chat, the more generic and interchangeable the responses became.

Concrete Symptoms:

- Phrases like "That's an interesting question" or "Here are some important points" multiplied
- Tone constantly shifted between different registers
- Creative texts increasingly sounded "AI-generated"
- Output personality disappeared in favor of platitudes

1.2 The Suspected Cause

The hypothesis: When an LLM must switch between too many different semantic spaces (disciplines, tonalities, contexts), it defaults to the safest, most frequently trained phrases – the generic standard formulations that fit everything but truly hit nothing.

Metaphor: Like a musician trying to play jazz, classical, and metal simultaneously, everything ends up diluted because no clear musical identity exists anymore.

1.3 Relevance for Organizations

This problem affects every organization wanting to use AI for communication:

- **Customer Service:** AI-generated responses often sound like "template text" rather than the specific organizational culture

- **Marketing:** Content seems interchangeable and loses brand personality
- **Internal Communication:** Important nuances of company language are lost

The question was: Can you get AI to speak in a specific, consistent voice?

2. The Method: Constraint-Based Context Design

2.1 The Core Principle

Instead of giving the LLM access to its entire training knowledge, the context was radically restricted:

Only a single, coherent world as knowledge base.

In this experiment: The Swedish metal band Ghost – their lyrics, interviews, aesthetics, fan discussions. Nothing beyond that.

2.2 Why This Approach?

The principle is based on several cognitive and technical mechanisms:

1. Semantic Coherence

When all data comes from the same semantic space, it can be linked more deeply. Instead of superficial connections between many topics, dense networks emerge within one topic.

2. Constraint-based Creativity

Known from creativity research: Restrictions often foster innovation because they prevent falling back too quickly on familiar solutions.

3. Stylistic Consistency

With limited vocabulary and recurring motifs, a recognizable "style" develops – similar to how an author working in one genre has a clearer voice than someone constantly switching between genres.

2.3 The Experimental Setup

Prompt Structure:

The AI was instructed to behave like a "small LLM" trained exclusively on Ghost material. This included:

- Explicit context limitation
- Role definition ("You are MiniGhoul, trained only on Ghost data")
- Consistent maintenance of this role throughout the conversation

Important: This worked without technical fine-tuning or model adjustment – purely through prompt engineering and consistent context control.

3. The Experiment: 60 Minutes in the Ghost Universe

3.1 Timeline and Output

In a session of approximately 60 minutes, the following emerged:

1. **Conceptual Foundation:** Definition of "MiniGhoul" as focused AI instance
2. **Creative Exploration:** Conversations about Lucifer, meaning of Ghost

3. **Practical Creation:** A complete mock EP "Haunted Classroom"

Total Output:

- 6 song concepts with titles
- 1 complete song lyrics ("The Flute in the Wall")
- Liner notes for each track
- Press release in Ghost style
- Reddit fan discussions with track-by-track analysis
- Fan theories and speculation

Special Feature: Everything on the first try, without revision or corrections.

3.2 Qualitative Analysis: What Was Different?

Consistency:

The tone remained stable over 60 minutes. Example from the liner notes:

> "This track was recorded in a primary school that no longer exists. The building was demolished after 'structural resonances' were reported during the bridge section. No children were harmed — though several recorders continue to play faintly when the wind is right."

This mixture of humor, eeriness, and specific details permeates all texts.

Specificity Instead of Generic:

Instead of "scary atmosphere" or "dark themes," concrete images emerged:

- "Overhead projectors" as recurring motif

- "Year 4 Music 1987" as specific time marker
- "Budget for exorcisms again?" as absurdly specific dialogue

Emergent Creativity:

The AI developed its own concepts within the framework:

From the Reddit discussion:

> "If you loop it backwards, it whispers 'homework.'"
>
> "At 2:14 you can hear a parent mutter 'budget for exorcisms again?' right before the bass drops."

These details weren't prescribed but emerged from the logic of the Ghost universe.

3.3 Comparison: Focused vs. Diluted

Typical Multi-Topic Chat:

- "That's an interesting idea for a song"
- "Here are some suggestions for scary elements"
- Shifting between different tonalities

Focused Ghost Context:

- "laughs through a puff of chalk dust, his voice echoing off locker doors"
- Consistently in character
- Consistent aesthetics in every sentence

4. Results & Analysis: Why Does This Work?

4.1 Bias Mitigation Through Conscious Context Choice

A critical question with Constraint-Based Design: Doesn't a limited context amplify the biases in the data?

Yes - if the context is homogeneous.

Therefore, the choice of data source was crucial. For the experiment, the Ghost community was deliberately chosen as the basis, not Metallica or other metal bands.

The Reason:

The Ghost fanbase is unusually diverse for a metal band:

- **Gender-mixed:** Estimated 40-50%+ female fans
- **LGBTQ+-friendly:** The band celebrates inclusivity
- **Cross-generational:** From teenagers to 70+
- **Thematically rich:** Religion, love, lust, death, humor, camp - not just "brutal metal"
- **Inclusive rather than gatekeepy:** "Everyone is welcome" instead of "That's not real metal"

In Comparison:

A traditional metal community (e.g., Metallica, Slayer) would be:

- Predominantly male
- Potentially aggressive language
- Narrower thematic range
- More gatekeeping

The Result:

Even within the narrow context "only Ghost," the data contains diverse perspectives, different emotional registers, and inclusive language. MiniGhoul thus developed a tone that was creative and specific, but not toxic or one-sided.

Learning for Business Applications:

Even with focused contexts, the data source must be internally diverse:

- **Insurance AI:** Not just letters from one claims adjuster but from various employees, departments, tonalities
- **Content Marketing AI:** Not just successful posts, but also different target groups, perspectives
- **HR AI:** Not just texts from leadership level but various hierarchy levels, diversity groups

Best Practice: The context should be focused, but not homogeneous.

4.2 Technical Explanation

Semantic Vector Spaces:

LLMs organize meaning in high-dimensional spaces. Words and concepts that frequently co-occur lie closer together.

With Focused Contexts:

- **Denser clusters:** Terms like "cathedral," "sin," "light," "mercy" are tightly networked in the Ghost context
- **Deeper associations:** Instead of superficial "What fits?" nuanced relationships are used
- **Less noise:** No competing associations from other contexts

4.3 Psychological Explanation

For Humans as Recipients:

Our brain responds to coherence with trust. When a text is stylistically consistent:

- It appears more authentic
- It creates more immersion
- It's perceived as "from one author"

Paradox of Constraint:

Known from creativity research: Restrictions can foster creativity because they:

- Reduce decision load
- Enable focus
- Force unexpected combinations within the limited space

4.4 Measurable Differences

Even without formal metrics, the following quality differences were obvious:

Criterion	Multi-Context	Focused Context
Style Consistency	Changing	Consistently stable
Specificity	General formulations	Concrete details
Authenticity	"AI-generated" recognizable	Seems like from one author
Creative Depth	Superficial	Emergent new concepts
Iterations Needed	Many corrections	Usable on first draft

5. Business Applications: Transfer to Organizations

5.1 Principles of Transfer

The insights can be transferred to any business communication where AI is used:

Instead of: "The AI knows everything about our industry"

Better: "The AI knows our specific way of communicating"

5.2 Use Case: Customer Communication in Insurance

Traditional Approach:

- AI is trained on "all insurance products"
- Result: Standard formulations like "Dear Sir/Madam, we regret..."

Constraint-Based Approach:

- AI is trained on the specific communication culture of Company X:
    - How do experienced employees write?
    - What tonality does the brand have?
    - Which formulations are typical?
    - How are difficult topics addressed?

Result:

- Letters sound like "our company," not like "some insurance company"
- Higher acceptance among customers
- Higher satisfaction among employees (who no longer feel replaced)

5.3 Use Case: Content Marketing

Problem: AI-generated marketing content often seems interchangeable.

Solution: Limited context to:

- Previous successful texts of the brand
- Tonality guidelines
- Target audience-specific language
- Brand voice definition

Example from Medium-sized Business:

A mechanical engineering company wants to write blog posts about Industry 4.0. Instead of letting the AI access "everything about Industry 4.0":

- Only own previous successful blog posts
- Interviews with own experts
- Specific customer problems the company solves

Result: Content that sounds like the company, not like a generic tech blog.

5.4 Use Case: Internal Communication

Scenario: An HR team wants to use AI to write employee newsletters.

Constraint-Based Approach:

- Training only on previous newsletters
- Company-specific jargon and running gags
- Typical formulations of HR leadership
- Cultural peculiarities (e.g., "We use first names")

Benefit:

- Newsletter sounds like "us"
- Employees recognize the familiar voice
- AI supports but doesn't replace personality

5.5 Additional Applications

- **Technical Documentation:** Consistent in in-house style
- **Social Media:** Brand-compliant posts instead of generic content
- **Sales Communication:** Emails that match sales style
- **Product Descriptions:** In specific brand voice

6. Implementation Framework: How to Implement It

6.1 Phase 1: Analysis & Definition (1-2 Weeks)

Step 1: Identify Your "Voice"

Ask yourself:

- How do we communicate in our best moments?
- Which texts/letters/emails are received most positively by customers?
- What makes our communication unique?
- Which formulations are typical for us?

Step 2: Collect Examples

Gather:

- 20-50 successful customer communications
- 10-20 internal documents that hit the desired tone
- Guidelines, style templates, brand voice definitions

- Feedback: What do customers like about our way of communicating?

Step 3: Define Boundaries

What should the AI NOT do?

- Which tonalities are inappropriate?
- Which formulations do we want to avoid?
- Where does our "world" end?

6.2 Phase 2: Context Design (1 Week)

Step 1: Create the Focused Context

Implement technically through:

- **Custom GPT (ChatGPT):** Upload example documents as knowledge base
- **Project Knowledge (Claude):** Similar approach with document upload
- **System Prompts:** Clear instructions to draw only from this material

Example Prompt Structure:

```
You are a communication assistant for [Company
X].

You exclusively know:
- The communication culture of Company X
- Examples of successful customer letters (see
documents)
- The brand values: [List]

You do NOT know:
- General insurance language
```

```
- Standard text modules of the industry

Your task: Write as an experienced employee of
Company X would.
```

Step 2: Test Iteratively

- Have the AI write 5-10 sample texts
- Compare with real texts
- Adjust context as needed

6.3 Phase 3: Pilot Project (4-8 Weeks)

Recommendation: Start small and focused

Example Pilot:

- One employee uses the focused AI for 20 customer letters
- Each letter is reviewed before sending
- Feedback is documented

Success Metrics:

- Review time compared to before
- Number of corrections needed
- Customer feedback (if measurable)
- Subjective assessment: "Does this sound like us?"

6.4 Phase 4: Scaling & Refinement

After Successful Pilot:

- Refine context based on learnings
- Develop further use cases
- Team training: How to optimally use the focused AI?
- Continuous improvement: Regularly add successful new texts to context

6.5 Best Practices

DO:

- ✅ Start with clearly delineated use case
- ✅ Use real, successful examples as basis
- ✅ Involve employees early
- ✅ Review every output initially
- ✅ Document what works

DON'T:

- ❌ Don't try to cover "everything" with one AI
- ❌ Don't overload the context with too many different examples
- ❌ Don't expect perfection on first try
- ❌ Don't forget the human review loop
- ❌ Don't neglect ongoing development

7. Summary & Outlook

7.1 Core Insights

1. **Less is more:** Focused contexts generate better results than broad knowledge base
2. **Consistency emerges through limitation:** Constraints foster coherent, authentic communication
3. **Transferability:** The principle works in any communication context, not just creative projects

4. **Practical Feasibility:** No technical specialization needed, implementable with standard tools

7.2 Limitations & Open Questions

Limitations:

- Works best with clearly definable communication styles
- Requires good examples as starting material
- Review processes remain necessary

Open Questions for Further Research:

- How large should the optimal context be?
- When does a limitation become too narrow?
- How do you prevent repetition with very small contexts?
- How do you measure authenticity objectively?

7.3 Outlook: The Future of Focused AI Communication

Development is moving toward:

- **Personalized Corporate AIs:** Each company has its own "voice"
- **Adaptive Contexts:** AI adapts to different situations but maintains core identity
- **Hybrid Approaches:** Combination of broad knowledge and focused personality

The central insight remains:

AI doesn't need to know everything to be useful. Often the opposite is true.

About the Author

Esther Hagendorf founded Aufania Alignments in 2025 with the mission to make AI development more human. With background as Product Owner, People Lead, and author, she combines technical understanding with empathetic communication.

Her approach: AI not as replacement for humans, but as tool that amplifies the specific culture and personality of organizations.

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