

The Culinary Tolerance Envelope: Mapping Conditions in Which a Dish Retains Its Function

A research protocol proposed by Ahmad Issam Maadarani

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This proposal replaces an unrestricted claim that a dish is stable with a map of specified conditions under which it fulfils a declared function. The question shifts from one ideal sample to serving time, moisture and portion-size boundaries. The map is a research proposal, not a safety or storage guarantee, and no domain is valid for every product.

1. Problem and proposed contribution

Service robustness was addressed earlier in this series. The addition here is a multivariable envelope rather than comparison at two moments only. Success at one waiting time cannot establish success at every moisture level or portion size. Temporal sensory literature [P] supports defining a time variable, but supplies neither a tolerance map for this dish nor its success threshold.

2. Defining success before testing

Consider a hypothetical crisp base with a moist filling. Declare two goals: lifting a portion with the usual utensil and retaining describable textural contrast. Specify a separate procedure and practical success boundary for each before collecting data. Do not select a threshold retrospectively from favourable scores. Threshold development may require an initial development phase followed by separate validation data; using the same data to build and confirm the boundary exaggerates confidence.

3. Designing a modest map

Choose realistic waiting-time and moisture or filling-quantity levels, instead of changing many factors simultaneously. Compare factor combinations using independent preparations and the intended serving conditions. Allocate samples across sessions and record departures from target conditions. Repeated measurements of one base are not new bases. Samples at several times may share a batch, requiring analysis that recognises that dependence.

4. Measurement boundaries

Lifting failure is an operational behaviour, crispness description a sensory outcome, and liking a preference judgment. They are not interchangeable. Select a primary outcome and use others to interpret performance. Retain cases in which assessors cannot execute the procedure, because deleting them can make the domain seem wider. If success requires a different serving utensil, state that condition rather than hiding it beneath the same dish name.

5. Inference within the domain

Present tested combinations as success, failure or unresolved cases, with uncertainty for the relevant proportion or outcome. Do not colour space between tested points as guaranteed unless interpolation is justified and checked. Near a boundary, unresolved may be more accurate than a sharp line implying certainty. Plan study size around practically relevant change and batch structure, not a fixed number applicable to every dish.

6. A test that can expose a weak map

Reserve conditions or preparations for a later validation round. Failure of new preparations inside the predicted domain requires narrowing or revision. A changed supplier, utensil or production scale introduces a new context, not a matched repeat. Record deviations before explaining them. The problem may concern execution or the boundary itself; neither explanation should be assumed to protect the proposal.

7. What can serve as a reference

The reference consists of conditions, definitions, procedure and limits of generalisation. It permits the cook to say that the function succeeded in tested combinations and remains untested elsewhere. It is not a declaration of food safety over the interval or guaranteed performance in every restaurant. The concept's strength is specific, challengeable performance validity rather than promises beyond the data.

8. References and limits of source use

References support the stated background. Proposed protocols and hypothetical cases are not findings attributed to those studies.

[P] Pineau, N., Schlich, P., Cordelle, S., Mathonnière, C., Issanchou, S., Imbert, A., Rogeaux, M., Etiévant, P., & Köster, E. P. (2009). Temporal Dominance of Sensations: Construction of the TDS curves and comparison with time-intensity. *Food Quality and Preference*, 20(6), 450–455. <https://doi.org/10.1016/j.foodqual.2009.04.005>

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9. A concise working sheet

Field	Review question	What to record
Function	What constitutes maintained performance?	Declared operational and sensory boundaries.
Domain	Which conditions were actually tested?	Time, moisture and portion size.
Validation	Do new preparations succeed?	Validation cases, without guaranteed interpolation.

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