



EMBRACE THE ELECTRODE!

Enriching qualitative
insights with biometrics

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Q: Why pair biometrics tools with qualitative discussion?

A: Neither qualitative inquiry nor biometric data alone can tell the whole story. But by pairing the two, researchers can dive deeper and get more accurate, actionable data than they can from either approach on its own.

Qualitative researchers typically rely on participants' conscious descriptions of their emotional responses to stimuli.

These descriptions tell us how participants *like* to think they feel.

But their descriptions can be incomplete – and often wildly inaccurate – because participants:

- May not truly remember
- Aren't always conscious of their full, true emotional reactions
- May lack the vocabulary to describe their reactions
- Might be lying

But while biometric data can reveal insights that aren't possible with discussion alone, it cannot stand on its own. Without a qualitative element, biometrics can only tell *part* of the story.

Conversation enables qualitative researchers to interpret biometric data and understand the difference between:

- Conscious and unconscious
- Described and actual
- Remembered and experienced

Utilizing biometric measures in qualitative research provides the same comprehensive view as pairing quant and qual: biometrics gives us the “what” while qual gives us the “why.”

An overview of select biometric measures

FEMG, ECG and GSR record impulses from the peripheral nervous system; EEG measures impulses emanating from the brain itself.

Galvanic skin response (GSR)

- Sensors applied to the skin detect changes in skin conductivity that indicate psycho-physiological responses to a stimulus
- **Best for:** Visual stimuli (e.g. television ads/pilots, shelf sets)
- **Pros:** Non-intrusive; can be used remotely; data is available in real time and easy to interpret
- **Cons:** Only indicates when engagement occurs, not why; does not pinpoint emotions

Facial electromyography (fEMG)

- Electrodes affixed to the face detect subcutaneous muscle activity, capturing the same 7 emotions as facial coding (see next page)
- **Best for:** Print ads, video/TV ads, websites
- **Pros:** Far more sensitive than facial coding; can detect imperceptible movements/reactions; valuable for stimuli that doesn't elicit strong emotions; can detect emotions respondents aren't aware of/are reluctant to acknowledge
- **Cons:** Invasive; cannot be used remotely; requires a neuroscientist to analyze/interpret; typically used with other measures, which increases complexity and cost

Electroencephalography (EEG)

- Electrodes affixed to the scalp measure impulses from neurons in the brain; enables researchers to measure engagement and recall
- **Best for:** Advertising and branding research
- **Pros:** Can track minute changes in activity over fractions of a second
- **Cons:** Expensive; more invasive than other methods; can be difficult to determine if data is being influenced by outside factors; requires expert to interpret/analyze

Electrocardiography (ECG)

- Measures and registers the electrical activity of the heart via sensors placed on the skin; can measure levels of attention correlated with specific points in time
- **Best for:** Advertising content exploration
- **Pros:** Works well in conjunction with other biometric measures
- **Cons:** Cannot indicate whether engagement is positive or negative

An overview of select biometric measures (cont'd.)


Eye tracking and facial coding measure physiological proxies for brain activity.

Eye tracking

- Uses specialized glasses (for in-person) or a webcam (for remote/online) to identify what a respondent looked at, when and for how long
- **Best for:** Visual stimuli: retail sets, packaging tests, brand communication, websites
- **Pros:** Extremely affordable; can be used remotely; high likelihood of useful data; easy to interpret
- **Cons:** Cannot be used with all respondents; data requires processing; data generally not available in real time

Facial coding

- Uses software to capture 7 emotions – anger, fear, disgust, contempt, joy, sadness and surprise
- Can indicate *when* emotional reactions to stimuli occur and the comparative strength of each
- **Best for:** Best for visual stimuli (e.g. video) but can also be used with written concepts if they are emotionally evocative enough
- **Pros:** Cost-efficient; no special equipment required; non-invasive; can be conducted remotely; data can be available in real time and is easy to interpret
- **Cons:** Stimuli must evoke strong emotions; cannot detect complex emotions; high data throwaway rate (60-70%); norms are based on Caucasian respondents, so ethnic bias can be introduced if used with non-white respondents

Many thanks to **Bob Granito** from [SAGO Research Labs](https://www.sago.com) who shared his expertise and provided guidance in the creation of this presentation and handout.

For more information on biometric tools and how they can be utilized in qualitative research, contact Bob at:

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Incorporating biometric tools influences the execution of each part of a qualitative study

Make sure to:

- ✓ **Select appropriate objectives.** Make sure you choose objectives that biometrics can meet. Just as important, ensure that at least some of your study objectives call for biometrics; don't try to include biometrics in a study if doing so isn't warranted.
- ✓ **Get retailer buy-in (for in-store studies).** Having store management permission is essential; biometric studies have too many moving parts to try to do in-store studies on the sly. It will also be difficult to determine whether biometric data is indicating a genuine response to the stimuli or is instead being clouded by distractions and respondent anxiety.
- ✓ **Build in comparisons.** Design your study and guide to gather comparisons – like your client's product vs. the competitor's or a new package design vs. the current package. Normative data doesn't exist, so researchers must create their own.
- ✓ **Choose the right stimuli.** Make sure that stimuli will elicit reactions that can be measured. For instance, facial coding requires stimuli that is emotionally evocative enough to elicit a measurable response. Your biometric equipment provider can give you guidance on the appropriate stimuli for the biometric tool you are using (and vice versa).
- ✓ **Give participants identical direction.** Writing a script and reading it verbatim to every respondent is an easy way to ensure that everyone starts with the same information, which helps improve the validity of the biometric data.
- ✓ **Capture biometric data *first*.** Structure the research sessions to collect biometric data at the beginning, followed by discussion. This will enable participants to “go in cold” and avoid influencing what they might look for/pay attention to.
- ✓ **Be prepared for a learning curve.** Biometric data collection is as much art as science. There's a high possibility for things to go wrong, especially when you are first starting out. Practice makes perfect!

There are also screening considerations when recruiting participants for biometric studies

✓ Set expectations up front

- Make sure to explain the biometric tools that will be used in the study *during the screening process* (e.g. Will participants need to wear eye tracking glasses? Will electrodes be affixed to their skin?)
- Including this information as part of informed consent ensures participants know what they are agreeing to *before* they say “yes” to your study.

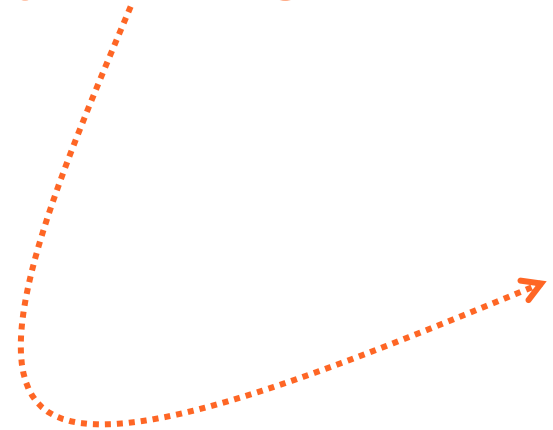
✓ Know that respondent eligibility can vary

- For example, respondents with certain eye conditions, certain types of corrective lenses or who have had eye surgery won't qualify for eye tracking studies. Your biometric equipment provider can advise you on other recruiting considerations and limitations.

✓ Over-recruiting is advisable

- While biometric tools are constantly evolving and improving, there still can be a high data throwaway rate.
- To ensure you get enough usable data, it is advisable to overrecruit. A recruiting partner familiar with utilizing biometric measures should be able to advise you on the right number of total respondents to recruit.

See the next page for suggested screening questions for studies utilizing eye tracking.



Sample screening questions for eye tracking studies

1. Do you have any of the following conditions or have you undergone any of the following procedures?

- | | | |
|----------------------------|--------------------------|------------------|
| Lazy eye | <input type="checkbox"/> | TERMINATE |
| Astigmatism | <input type="checkbox"/> | TERMINATE |
| Glaucoma | <input type="checkbox"/> | TERMINATE |
| Cataracts/cataract surgery | <input type="checkbox"/> | TERMINATE |
| Lasik eye surgery | <input type="checkbox"/> | TERMINATE |
| Other type of eye surgery | <input type="checkbox"/> | TERMINATE |
| Loss of sight/Blindness | <input type="checkbox"/> | TERMINATE |
| None of these | <input type="checkbox"/> | CONTINUE |

2a. Do you need to wear glasses or contact lenses when you shop in a store? **[ALLOW RESPONDENTS TO SELECT BOTH GLASSES AND CONTACTS IF APPLICABLE]**

- | | | |
|------------------------------|--------------------------|--------------------|
| No | <input type="checkbox"/> | SKIP TO Q.3 |
| Yes, I need to wear glasses | <input type="checkbox"/> | ASK 2B |
| Yes, I need to wear contacts | <input type="checkbox"/> | ASK 2C |

2b. Do you need to wear bifocals with a visible line on the lenses?

- | | | |
|-----|--------------------------|------------------|
| Yes | <input type="checkbox"/> | TERMINATE |
| No | <input type="checkbox"/> | CONTINUE |

2c. Do you need to wear contact lenses made of glass?

- | | | |
|-----|--------------------------|------------------|
| Yes | <input type="checkbox"/> | TERMINATE |
| No | <input type="checkbox"/> | CONTINUE |

TERMINATE IF RESPONDENT MENTIONS ANY OF THE ABOVE CONDITIONS OR NEEDS TO WEAR BIFOCALS WITH VISIBLE LINES OR CONTACTS LENSES MADE OF GLASS.

Asking the right questions

Start with closed-ended questions, then have a conversation.

- For instance, ask participants which brands they recall seeing on a store shelf or if they recall any interesting claims in the stimuli (e.g. a print ad) they were shown.
- These types of questions (e.g. brand awareness) can also be asked as part of the screening process.

Probe recall fully.

- If a participant says they only recall seeing one thing and not another, ask them to describe everything they *did* remember.

Look for opportunities to compare.

- In addition to building comparisons into the guide, look for spontaneous opportunities that present themselves.
 - For example, if a shop-along participant mentions something in another part of the store that relates to the conversation at hand, ask them to walk you over to the other item/area to talk about why they mentioned it.

Plan ahead...because there's no going back.

- Biometric data is often not available until weeks after the end of field, so it is important to question participants even more thoroughly than usual in order to get as much detail from the discussions as possible. This will give you the data you need to accurately interpret and understand the biometric data once it comes in.
- Over time you will learn what qualitative information will be most useful in the analysis process.

There are also important "do nots":

- ✗ Don't ask why respondents *didn't* see something.
- ✗ **Don't ask participants to narrate to the replay.** Even if you do have real-time biometric data available during the discussion, *don't* spend your limited time asking respondents to explain it.

These types of questions require respondents to explain something they may not be aware of. If they don't know the answer, they may feel compelled to make something up to explain themselves, which isn't helpful.

Many thanks to **Tom Rich**, an expert moderator and foremost authority on incorporating biometrics into qualitative research. Tom provided the information in this handout for moderating best practices when using biometrics.

If you have questions for Tom about utilizing biometrics in qual research, contact him at:

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Prepare for analysis!

Before you begin analyzing your data...

Set action standards appropriate to sample size.

- Action standards = whatever you need to learn from the research to allow you to make decisions. To do so, you'll need to know what decisions will be made based on the research, and which objective criteria will drive those decisions.
- For a package design study, you may decide that the package that participants notice first (shortest “time to first notice”) will be the winning concept
 - You can also use a combined action standard that sets a biometric requirement like this along with the preference respondents shared during the qualitative conversation.

Don't be afraid to analyze data at the individual respondent level.

- Biometric tools allow us to examine individual respondents and use their story to put a human face on the data. Because this is qualitative research that already deals in small sample sizes, significance isn't a concern, so don't be afraid to focus on a specific participant if it helps tell a bigger story.
 - For instance, you might tell the story of a participant's from their initial brand or product awareness to their biometric responses to stimuli to their final awareness/consideration as expressed in the qualitative discussion.
- If you are concerned about data validity and reliability, you can always follow up with a traditional quant exploration.

Compile pre- and post-exposure data.

- This might include information captured during the screening process or early in the interview (e.g., brand awareness) that you ask about again after the biometric data capture.

Consider the data comparisons you want to utilize to help make the biometric data make sense. For instance, comparisons might be:

- **Within** the biometric data, like what respondents noticed vs. what engaged them
- **Between** biometric and qualitative data, like what respondents saw vs. what they remembered

Three tips for analyzing and incorporating biometric data into your reporting

1 Be prepared for tiny data differences (or no differences at all).

- Sometimes biometrics data alone *doesn't* tell the story and isn't sufficiently convincing. This is where the "art of the science" comes in.
- Because data differences can be fractional, this underscores the importance of setting appropriate action standards (see previous page) when pairing biometric data with qualitative data.
- **Remember, while biometric data can provide direction or suggestions, it *cannot* be considered statistically significant.**

2 Look for disagreement among data sources.

- End clients can get frustrated when data sources don't agree, but this is often where you find the best insights – **this is the good stuff!**
- Biometric data may contradict what participants say or remember, so be prepared to discover and explain this.

3 Not all biometric data is useful, so be willing to ignore data if it doesn't help tell your story.

- **IMPORTANT:** This is not suggesting that you ignore contradictory data – that stuff *is* important.
- But even if data confirms what participants said, it doesn't always add enough to warrant a significant time expenditure or focus in your reporting.
- In those cases, allow the qualitative discussion to lead the narrative, and only include biometric findings if they *truly* enhance and provide context for the point you're trying to convey.



Questions? Comments? Get in touch!



If you have questions about the information in this handout or would like to share suggestions or resources for future versions, please send me an email or give me a call. I would love to hear from you!

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