Photo credit: Dave DiCello

17-803 Empirical Methods

Bogdan Vasilescu, Institute for Software Research

Interviewing

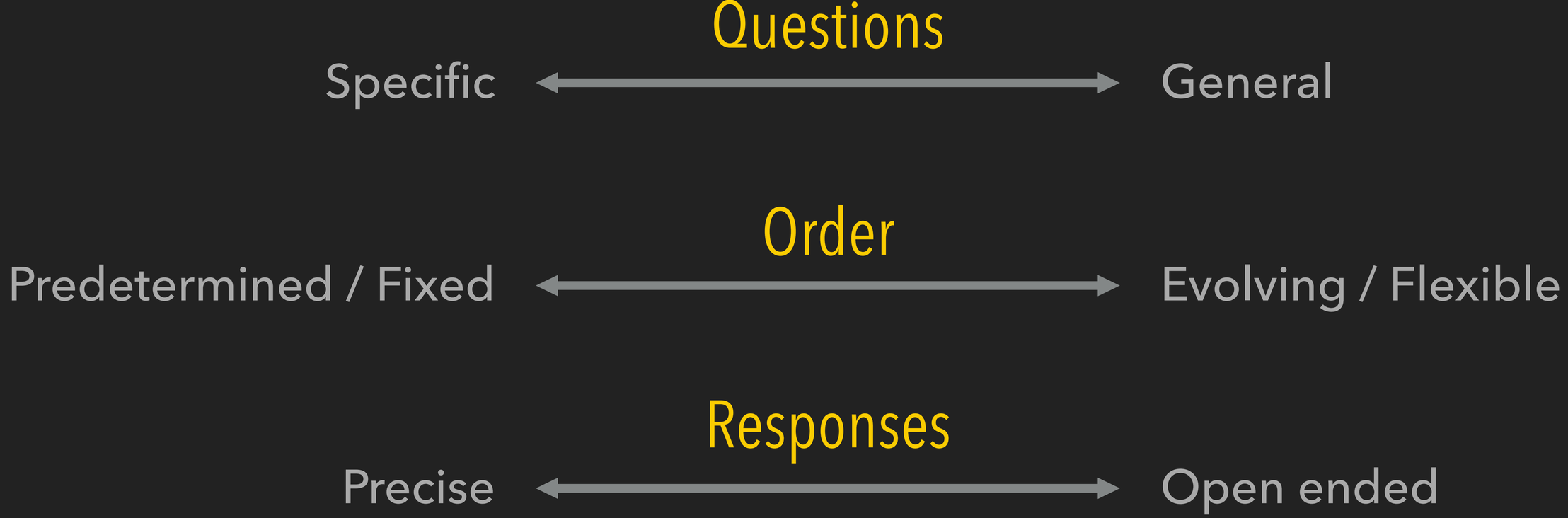
Tuesday, February 16, 2021

Outline for Today

- Interviews:
  - Setting up
  - Conducting
  - In-class activity at the end

Interviews are (the most) common method of data gathering in qualitative research.

A Variety of Forms of Qualitative Research Interviews



You Will Probably Encounter / Do Semi-Structured Interviews

When To Consider Doing Interviews

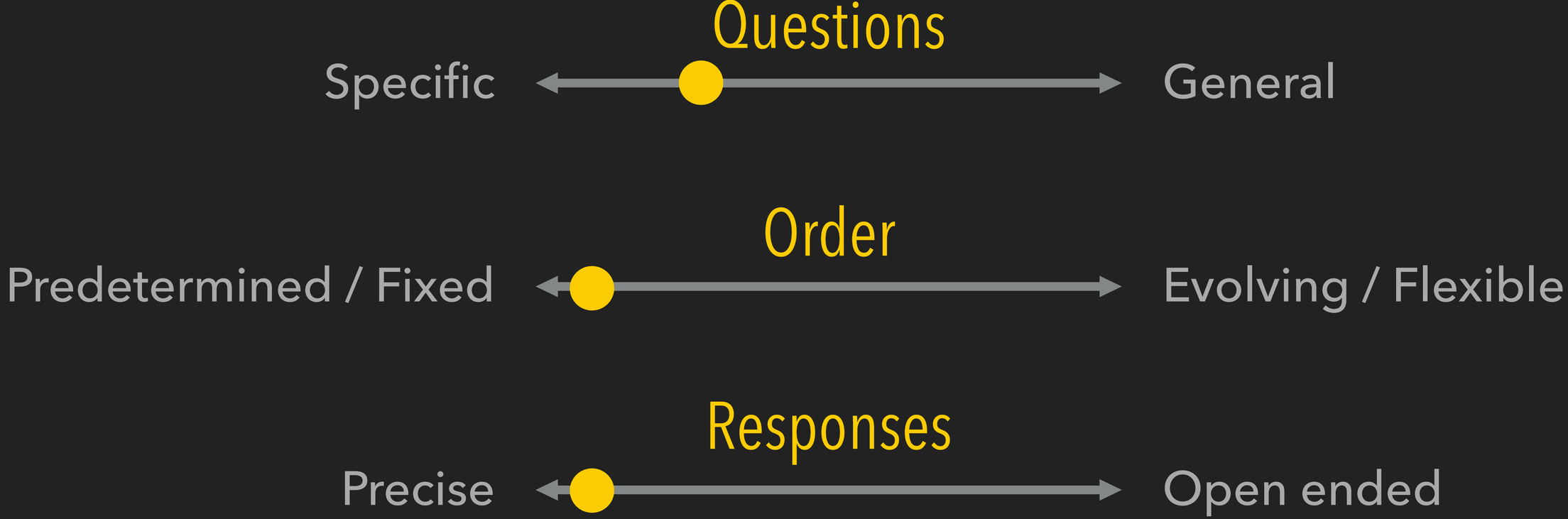
- Wonderful tools for exploratory investigation.
- Often can drive the formation of theories and hypotheses.
  - common in mixed-methods designs
- Great way to validate data!

Chris Bird @Microsoft Research

- "I was investigating code review latency at Microsoft when I found something odd in the data for a team in Bing: Many of their code reviews were signed off in just minutes (sometimes under a minute) after the code review was created.
- "I meticulously looked at the data collection code, I conducted a number of statistical tests on the data based on guesses that I had. Nothing.
- "As a last resort, I contacted one of the developers on the team and scheduled an interview. She explained that the reason for the lightning fast reviews was that they often conduct code reviews in person with two or three reviewers huddled around the developer's screen as they explain the change. Once the reviewers were happy, the author would create the request in the review system and the reviewers would immediately sign off on the review.
- "In just a few minutes, she had answered a question that I hadn't been able to answer after hours of testing hypotheses on data. You can learn things in an interview that you would never have thought of yourself."

http://www.cabird.com/wp/bird2016interviews/

Aside: You Can Use Interviews in Quantitative Research



Aside: You Can Use Interviews in Quantitative Research

- Quant: Interviewee as research *subject*
- Qual: Interviewee as research *participant*
  - actively shaping the course of the interview rather than passively responding to the interviewer's pre-set questions

Main Goals and Characteristics of Qualitative Interviews

- Goal:
  - see the research topic from the perspective of the interviewee;
  - understand how and why they come to have this particular perspective.

- Characteristics:
  - low degree of structure imposed by the interviewer;
  - preponderance of open questions;
  - focus on specific situations and action sequences in the world of the interviewee rather than abstractions and general opinions.

General Pros

- Interviews allow rich engagement and follow up questions.
- Collect historical data that is not recorded anywhere.
- Elicit opinions and impressions in richer detail than people would provide through written communication.
- Information from interviews can be triangulated with other data sources.
- Interviews can be used to clarify things that have already happened (especially following an observation).

General Cons

- Usually small sample size.
- The time required for each individual interview.
- The challenge of finding appropriate interviewees and scheduling a time that works for all parties.
- Potential bias introduced by the interviewer during the interview (word choice, tone of voice, body language can all affect responses).
- The time required for transcription and subsequent analysis.

Steps

1. Defining the research question
   - Typical focus is on how participants describe and make sense of particular elements of their lives.
   - Goal is *not* to quantify individual experience.
   - Avoid reflecting your own presuppositions or biases.
2. Creating the interview guide (protocol)
3. Recruiting participants
4. Carrying out the interviews
5. Analyzing the data

~~Step 1: Defining the research question~~
(We talked about this before)

~~Step 5: Analyzing the data~~
(Next time)

Step 2: Creating the interview guide

Interview Guide

- Not formal schedule of questions to be asked word-for-word in a set order
- Instead, list:
  - topics the interviewer should attempt to cover
  - probes which may be used to follow-up responses and elicit greater detail from participants
- Guide can evolve after each interview:
  - adding probes / topics that emerged spontaneously in interviews
  - dropping or re-formulating those which are incomprehensible or consistently fail to elicit relevant responses

General Topics To Be Covered: From Open to More Specific, Then Back To Open

- Introduction
- Background / History
- Opening questions
  - e.g., satisfactions, frustrations
- Follow-up questions
  - More detail
  - Specific areas to elaborate on
- Other important points
  - ‘Anything to add?’
  - ‘Anything we missed?’
- Wrap-up
  - Express appreciation

Typical Practice

- Include many information-seeking questions
  - followed up with probes to explore the interviewees' views and experiences in more depth
- Prefer questions that focus on concrete examples, rather than abstracted generalities
- Incorporates fully formed questions as well as just topic headings
  - The latter encourage the interviewer to be responsive to the interviewee and avoid presuppositions

Step 3: Recruiting participants

Considerations

- Amount of time and resource available
- Diversity of expected views
  - Representativeness of the sample
  - Depends on the design for which the interviews are being used

Purposeful Sampling Techniques

- Typical case
- Extreme or deviant case
- Critical case
- Sensitive case
- Convenience
- Maximum variation
  - Preferred, should allow the widest possibility for readers to connect to what they are reading

How Many Participants Are Enough?

- Sufficiency
  - reflect the range of participants and sites that make up the population
- Saturation of information
  - not learning anything new

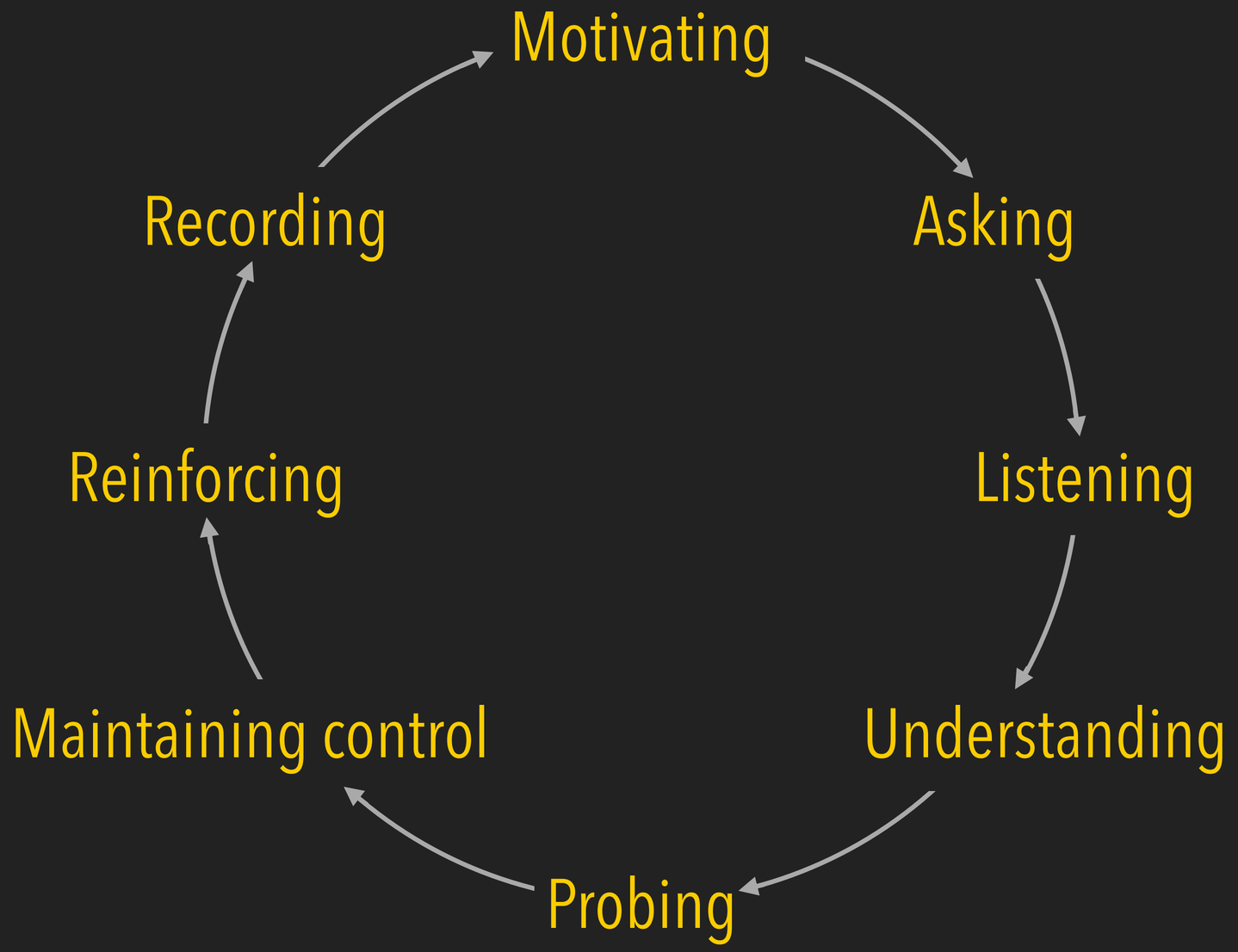
- Remember, you need to satisfy reviewers as well as yourself!

Considerations (2)

- Access through a gatekeeper
  - Formal or informal
    - Access through peers preferable to “above” / “below”
- Avoid interviewing “easy access” subjects
  - Need to have enough distance from interviewees so that they take nothing for granted
- Confidentiality

Step 4: Conducting the interviews

Interview Process



OB1 - 70-311: Building Effective Interviewing Skills

Interview Process

Motivating the Interviewee To Participate

- The purpose of the interview should be related to the respondent's own goals and values.
- Explain what will be expected of the interviewee in the course of the interview (e.g., the length of the interview, degree of expertise required).
- Specify the way in which information is used.

Motivating the Interviewee To Produce

- The interviewer must create and maintain an atmosphere in which the respondent feels fully understood and safe to communicate fully without fear of being judged or criticized.

- Provide periodic reinforcement on the process of the interview.

Motivating — Have Answers Ready for:

- Why are you doing this study?
- What do you get out of it?
- What does university X / company Y get out of this?
- What will I get out of this?
- Who is paying for this?
- Will I receive the data?
- How do I know it will be confidential?
- How long will this take?
- Are you doing other parts of the company?
- Why did you select my group / me?

Interview Process

Asking Questions

- Avoid asking multiple questions at once:
  - ‘Why did you join this open-source project, and do you think it has brought benefits to your programming experience?’
- Avoid leading questions:
  - ‘So you felt that using NL2Code improved your productivity?’
    - Instead: ‘What, if any, impact did NL2Code have on your productivity?’
  - ‘Your parents pushed you to study, didn’t they?’
  - ‘How satisfied were you with NL2Code?’

Asking Questions

- Avoid assuming that the answer to a question is so obvious that it need not be asked:
  - 'Whether, and to what extent, are you concerned about your privacy online?'
- Avoid imposing your perception:
  - 'So what you're really saying is …'

Asking Questions

- Avoid ending the interview on a difficult, threatening or painful topic.
  - Instead, finish by giving the interviewee the opportunity to make any comments about the subject at hand which have not been covered in the rest of the interview:
    - 'What else, if anything, should I have asked?'

Asking Questions

- Do ask questions in a simple, direct, clear manner.
- Do be flexible:
  - Topic order may change during interview
- Do open with a question which can be answered easily and without potential embarrassment or distress
  - E.g., requests for factual or descriptive information

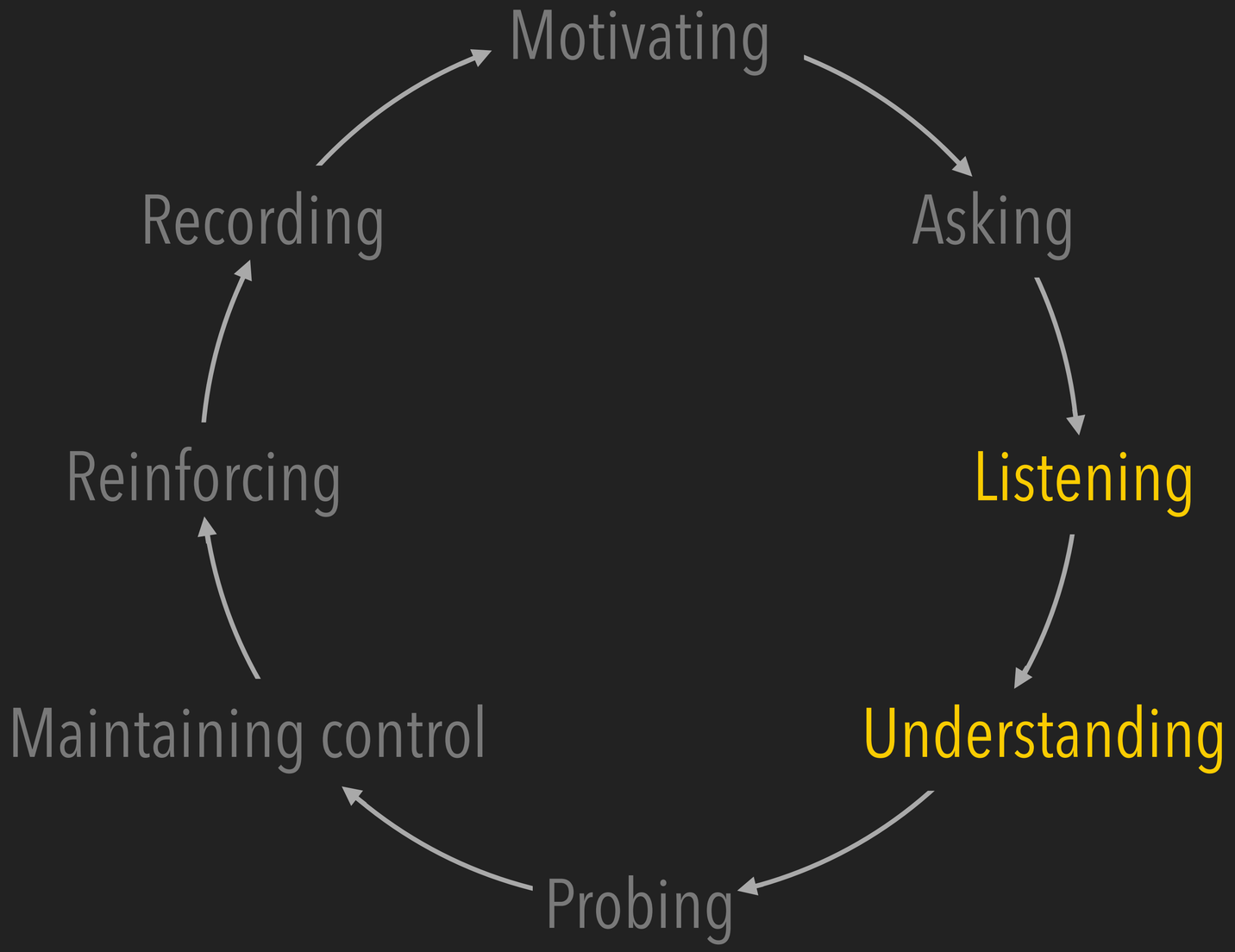
Asking Questions

- Do ask open ended questions
  - “Grand tour” questions:
    - ‘Take me through a day in your work life.’
    - ‘Reconstruct your day for me from the time you wake up to the time you go to bed.’
  - Subjective experience questions:
    - ‘What was attending this class like for you?’

Asking Questions

- Do follow up on what the participant says.
  - Clarifications, details, stories
  - Trust your instincts, explore emerging directions
- Do ask participants to reconstruct, not remember, their experience:
  - ‘What happened?’ (reconstruction) vs
  - ‘Do you remember what happened?’ (memory)
- Do ask for concrete details.

Interview Process



Listening Means

- Attending to verbal and non-verbal cues
- Attending to the total message – facts and feelings
- Being an active listener
- Testing listening with feedback

Understanding Means

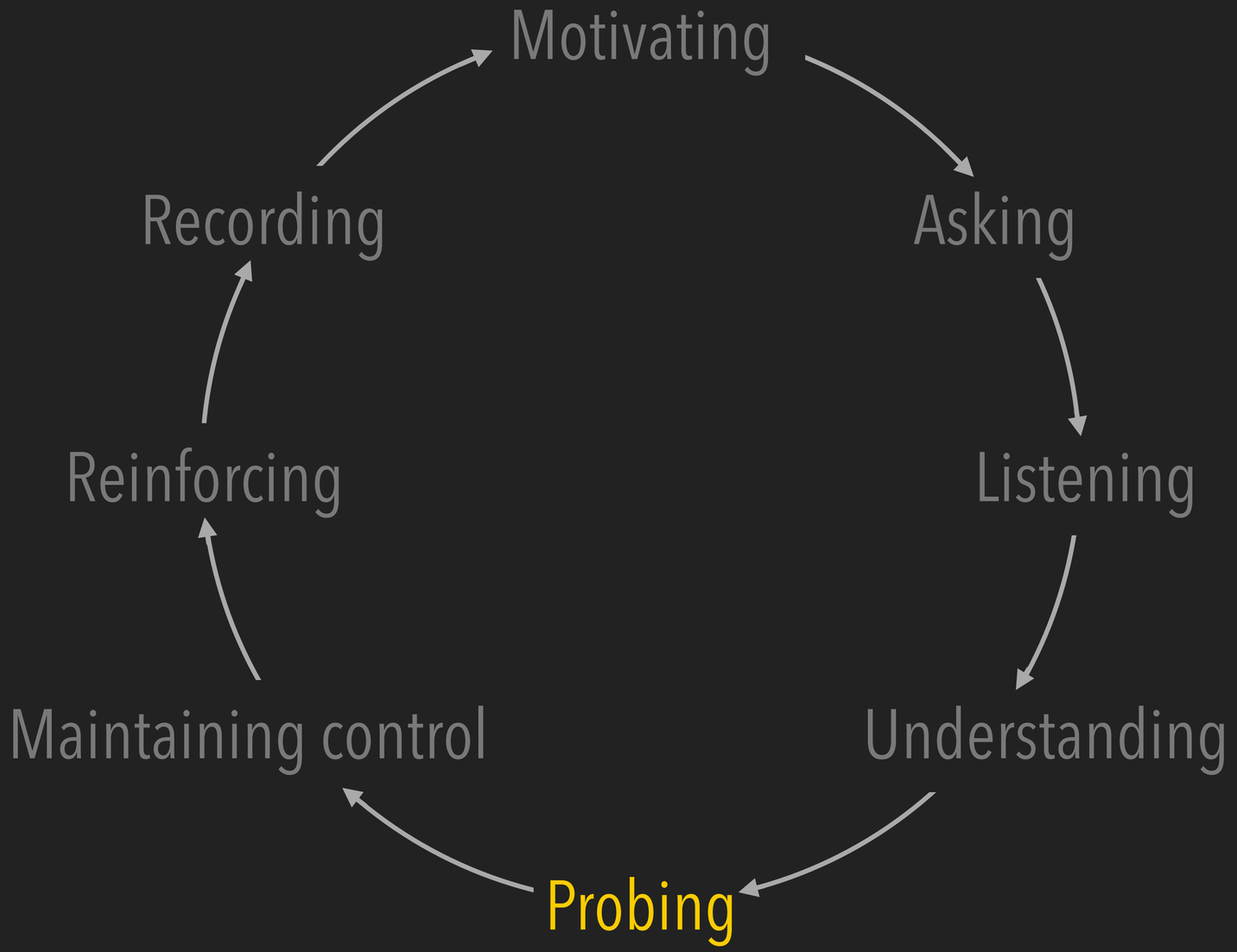
- Put yourself in the interviewee's frame of reference
- Be non-evaluative
- Don't prematurely analyze or draw conclusions

Listen More, Talk Less!

- Three levels:
  - The substance, must internalize what participants say
  - "Inner voice" vs "outer voice" (e.g., 'challenge', 'adventure', 'fascinate')
  - The process (assess progress, stay alert for cues about how to move the interview forward)

- Control mechanism:
  - listen to yourself in recordings / check length of your paragraphs in transcripts

Interview Process



Directive Probes

- Open-ended probe:
  - You: “What were the major responsibilities of your most recent job?”

- Specific probe:
  - Them: “I’ve always had the ability to learn a new programming language quickly.”
  - You: “What specific steps do you take to learn a new language?”

  - You: “How would you rate your contributions to this open source project?”
  - Them: “I think I’m a major contributor”
  - You: “I’m glad to hear that. What contributions in particular made you feel that way?”

Directive Probes

- Bi-polar probe:
  - You: “Most people I talked to can identify aspects of working remotely they really like and other aspects of working remotely that they dislike. Would you tell me about those aspects that you really like?”
    - then repeat question using dislike

- Elaboration probe:
  - You: “Is there anything else?”
  - You: “What else can you think about?”
  - You: “Any other thoughts?”

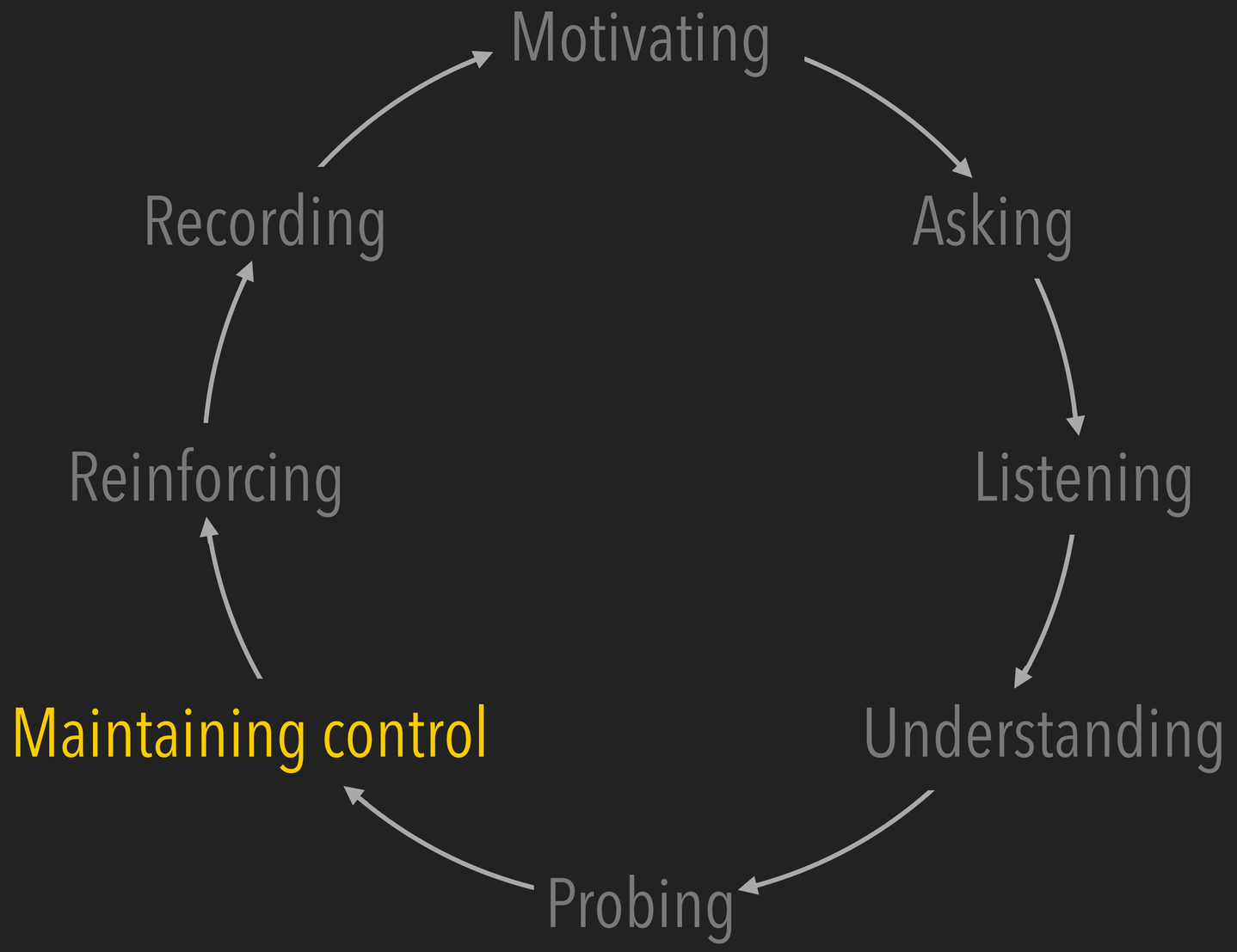
Non-Directive Probes

- Reflecting feelings:
  - Them: "…I've been here for 15 years and I don't feel I have been treated fairly."
  - You: "You feel you haven't been treated fairly?"

- Indirect follow-ups:
  - You: "…tell me more"
  - You: "I would like to hear more about that point, could you elaborate a bit?"

- Pause

Interview Process



Managing the Process

- Recall — active listening
  - assess progress, stay alert for cues about how to move the interview forward

- Follow up, but don't interrupt
  - Instead, take notes and return:
    - "A while back you talked about X. Would you talk more about that X?"

Dealing With Difficult Interviewees

- Uncommunicative interviewee – symptom: monosyllabic answers
  - Helps to be clear about required time and anonymity
  - Phrase questions as open as possible
  - Use silence

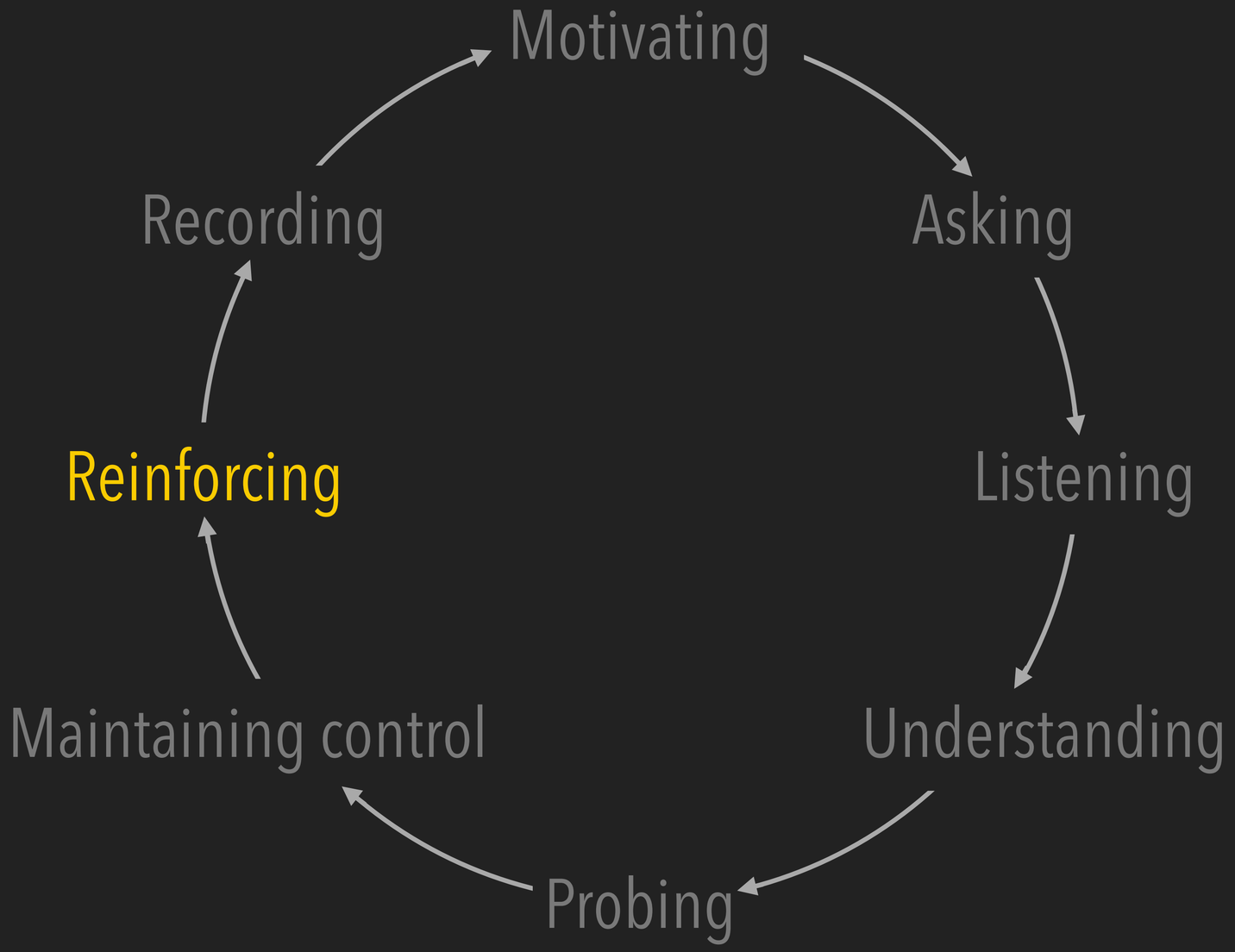
- Over-communicative interviewee – symptom: repeatedly straying far from your questions without adding anything of significant interest
  - Politely interrupt at a natural pause; refer back to an earlier point:
    - “That’s very interesting. Could we go back to what you were saying earlier about X, I’d like you to tell me more about that”

Dealing With Difficult Interviewees

- High-status interviewees:
  - Don’t appear over-familiar
  - Nor overly nervous or submissive
  - Instead, be respectful but confident of the worth of what you are doing and of your own expertise.

- Emotionally charged topics:
  - Give people the time they require to answer your questions
  - Avoid non-verbal cues that might be taken as indicating impatience
  - Skip question, return later if possible

Interview Process



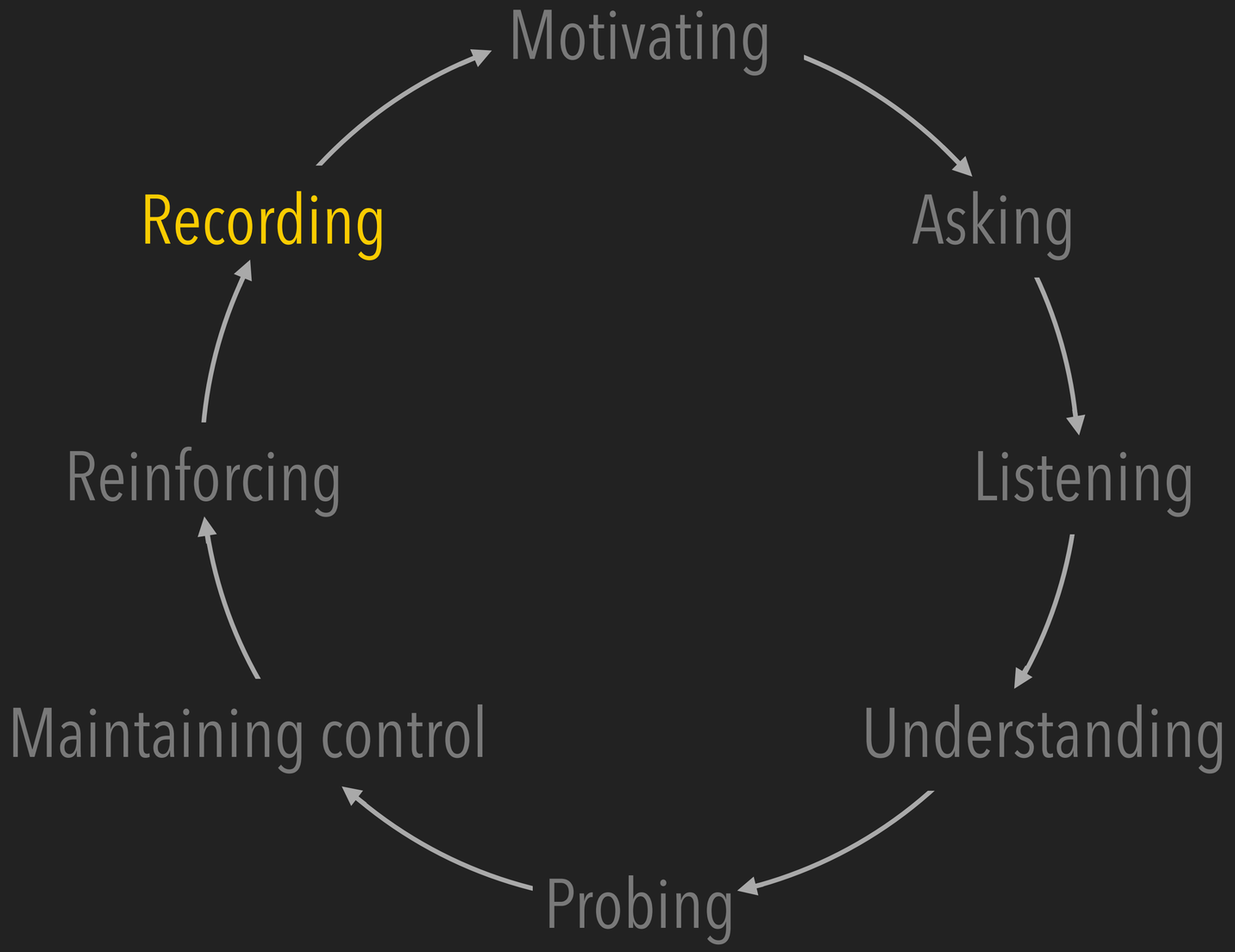
Feedback / Reinforcement

- Interviewees need to know how they are doing in producing information.
- Reinforce early and often (i.e. throughout the interview).
- Provide positive feedback without reinforcing specific content:
  - “We are making good progress.”
  - “I appreciate your willingness to help us in this project.”
  - “Your comments are very helpful to us.”

Dealing With "Contradictions"

- What you consider a contradiction may not be for the respondent
- Note any perceived contradictions with a quick note
- Postpone probing contradictions
- Wait for some natural break
- Feedback the ideas that seem to be conflicting in a neutral way:
  - "You mentioned X. You also mentioned Y. Help me understand the relationship between these two points."

Interview Process



Recordings and Transcripts

- Record the interview, capture everything verbatim.
- But still take copious notes during the interview.
  - Much easier to refer to notes than find a particular place in a recording.

- Whatever can go wrong, will go wrong!

Activity: Workshop an Interview Guide

- Goal: better understanding of how and why academic researchers collaborate on writing papers.
  - Perhaps you are studying collaboration technology in the workplace,
  - or you are a tool developer in the very early stages of trying to develop a winning collaboration technology for co-authorship,
  - or you are someone interested in improving the quality of collaboration in your field.
- Develop a short interview protocol.
  - Anticipate 15-20 minute interviews.
  - Use good technique, keeping the interviewee focused on concrete tasks.
- Be able to provide convincing rationale for all of your choices in producing the protocol – why these questions, what probes, etc.

Great Examples

- Barwulor, C., McDonald, A., Hargittai, E., & Redmiles, E. M. (2021). "Disadvantaged in the American-dominated internet": Sex, Work, and Technology. In Proceedings of the 2021 ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) (pp. 931-936).
- Wash, R. (2010). Folk models of home computer security. In Proceedings of the Sixth Symposium on Usable Privacy and Security (SOUPS) (pp. 1-16).
- Grinter, R. E., & Palen, L. (2002). Instant messaging in teen life. In Proceedings of the 2002 ACM Conference on Computer Supported Cooperative Work (CSCW) (pp. 21-30).
- Dabbish, L., Stuart, C., Tsay, J., & Herbsleb, J. (2012). Social coding in GitHub: transparency and collaboration in an open software repository. In Proceedings of the ACM 2012 Conference on Computer Supported Cooperative Work (CSCW) (pp. 1277-1286).
- Manotas, I., Bird, C., Zhang, R., Shepherd, D., Jaspan, C., Sadowski, C., ... & Clause, J. (2016). An empirical study of practitioners' perspectives on green software engineering. In 2016 IEEE/ACM 38th International Conference on Software Engineering (ICSE) (pp. 237-248). IEEE.

Credits

- Graphics:
  - Dave DiCello photography (cover)
- Content:
  - King, N. (2004). Using interviews in qualitative research. In C. Cassell & G. Symon (Eds.), Essential Guide to Qualitative Methods in Organizational Research (pp. 11-22). London: Sage.
  - Seidman, I. (2012). Interviewing as qualitative research: A guide for researchers in education and the social sciences: Teachers college press. (Ch 4, Ch 6).
  - Goodman, P. (2005). Building Effective Interviewing Skills. CMU Tepper 70-311
  - Chris Bird's (2016) interview guide. Published in Perspectives on Data Science for Software Engineering http://www.cabird.com/wp/bird2016interviews/