Adventures in Questionnaire Design

Poetics, Posters, and Provocations

Benjamin D. Wright

Marci M. Enos

Matthew Enos

John Michael Linacre

MESA Press

September 2001

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Questionnaire Design

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Benjamin D. Wright

Professor of Psychology

The University of Chicago

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Preface

This is not a textbook. At this stage in the evolution of our thinking about questionnaire design, we are unwilling to lay it out from A to Z. We may do so one day, but for now we offer a highly varied collection of one-page didactic handouts, examples of our work, essays on topics we think need further discussion, and wonderfully creative student products.

To tell the truth, we are ambivalent about writing a textbook on questionnaire design. We welcome the challenge. But we are uneasy about a "textbook." As you will realize when you turn these pages, no matter how hard we try to define the many aspects of questionnaire design, in the end there is always more.

Every questionnaire involves a conversation between designer, respondent, and audience. Conversation requires a psychology that respects the complexity of this robust yet fragile interaction. As scientists, we search for regularity in human behavior. At the same time we try to avoid sterile "rules" that could restrict our creativity. We hope this collection suggests both the careful thinking and unrestrained inventiveness we believe the subject deserves.

Questionnaires and the data they elicit are the modern equivalents of the hunter-gatherer campfire, where the news and business of the group are shared and discussed. Questionnaire design is a matter of great consequence. In our questionnaires, we are practicing and perfecting the art and science that made us human.

Benjamin D. Wright
Marci M. Enos
Matthew Enos
John Michael Linacre

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1

The Drama of Survey Research

Many Voices, Many Conversations

78 WAYS TO ASK

SCHOOL	was is could be might be can be will be	HELPFUL HELPFUL to	. children. students. you. one. us. me.	6*7 =42
Children Students One You We I	were/was are/am could be might be can be will be	HELPED BY	SCHOOL	6*6 =36

7 WAYS TO ANSWER

Check if YES	Circle if IMPORTANT			
Yes	No	maybe		
Absolutely YES	maybe yes	maybe no	Absolutely NO	
True	False			
Strongly AGREE	Agree	? don't know	Disagree	Strongly DISAGREE
ALWAYS	usually	sometimes	NEVER	
A LOT	some	a little	NONE	

MAKING 546 DIFFERENT WAYS to WRITE this QUESTION!

THIS NEEDS A THEORY OF CONVERSATION!

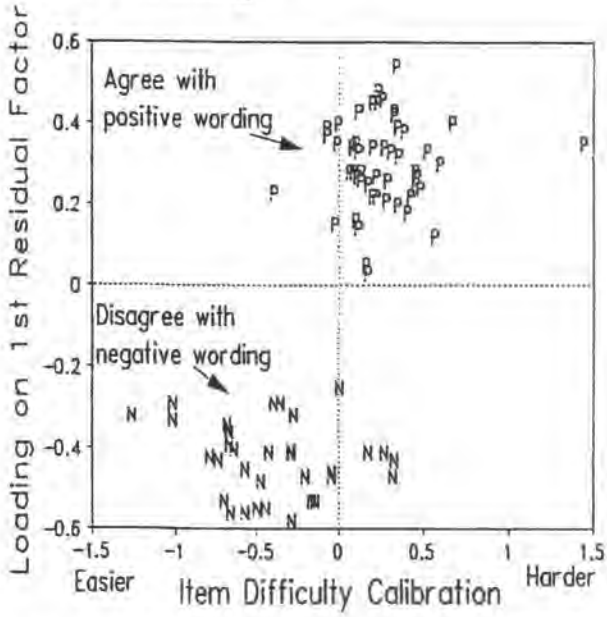
Positive vs. Negative Wording

Alternation of positively and negatively worded questions on attitude surveys is frequently employed to combat response sets in the respondents. The ratings on negatively worded items are reversed so that a total positively-oriented score is obtained.

But is negative the opposite of positive? This was central to an investigation of the relationships between therapists and their mentally-ill clients. A survey instrument of 83 items was constructed based on phrases clients use in talking about their relationships with their therapists. 33 items probed negative interactions and 50 probed positive interactions. Negatively worded items were reverse scored.

Rasch analysis of the responses of 211 clients to the survey produced an item hierarchy which confirmed the expectation that it is generally easier *not* to say negative things about a therapist than to say positive things. Factor analysis of residuals, however, displays more.

In the Figure, the x-axis corresponds to the variable.



The negatively worded items, N, are relatively easy to deny, and so are to the left. The positively worded items, P, are harder to affirm. According to Rasch model specifications, residuals from the observations, after removing that part explained by the measures, should comprise random noise. Principal components analysis of those residuals across items, however, shows a clear pattern in the loadings. The first factor (explaining 13% of the variance) is the y-axis in the Figure. Positive and negative items are stratified.

The connection between positively and negatively worded items is not merely the unidimensional variable of a "more" and "less" constructive professional relationship (the x-axis). The y-axis indicates that the personal relationship between therapist and client skews the responses. Thus negative and positive items probe similar, but distinct, aspects of the therapeutic situation. To ignore this might be to overlook the critical element in successful therapy.

Jane Yamaguchi
School of Social Service Administration
University of Chicago

Blind Guides to "Measurement"

Connolly AJ, Nachtman W, Pritchett EM. Keymath: Diagnostic Arithmetic Test. Circle Pines, MN: American Guidance Service, 1976.

Hambleton RK, Cook LL. Latent trait models and their use in the analysis of educational test data. Journal of Educational Measurement 1977; 14(2):75-96.

Jastak S, Wilkinson GS. The Wide Range Achievement Test - Revised: Administration manual. Wilmington, DE: Jastak Associates, 1984.

Lord FM. Small N justifies Rasch model. In: Weiss DJ, editor. New horizons in testing: latent trait test theory and computerized adaptive testing. New York, NY: Academic Press, Inc., 1983: 51-61.

Michell J. An introduction to the logic of psychological measurement. Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1990.

Woodcock RW. Woodcock Reading Mastery Tests. Circle Pines, MN: American Guidance Service, Inc., 1973.

"The union of the mathematician with the poet, fervor with measure, passion with correctness, this is surely the ideal."

William James, Collected essays and reviews, 1920, ch. 11. *Courtesy of Theo Linda Dawson.*

THEY

are furthest away, least crucial. It is about somebody out there. It is the easiest to project sensitive answers onto so that the respondents will think it is not their problem that they are referring. For example:

What should the women who want to have abortion consider?

HE/SHE

are a bit closer. The projection is better focused but well removed. But I have no responsibility, no commitment, it's just those other guys. The singularity does hint at someone with whom I might identify, if I chose. For example:

What is your attitude towards your friend's decision if she has had an abortion?

YOU

is just between us, it is informal, confidential conversation and correspondence. It involves personal commitment in the sense of loyalty since it invites intimacy if the setting is not forbidding. For example:

Will you consider abortion if you get pregnant before marriage?

WE

are together in this, I'm not alone. It's you too. The tone delivers a shared responsibility, commitment as well as blame. For example:

How can we curb illegal abortion?

US

is even more intimate. Us is what happens to we when the action starts. For example:

What will happen to us if abortion becomes legal and easy to access?

I

is owning up to myself, my public self, my ambitious self, my front. For example:

I will abort the baby if I get pregnant because of rape.

ME

is the last and closest step, the victim, the recipient, the needy little inner self. It is usually kept most secret. For example:

If I have abortion, guilty feeling will accompany me all my life.

4

How to Get the Most Out of This Course

Ben Wright

A. DIG ON THE GROUND

1. **Find** questionnaire examples. **Bring** them to class.
2. **Write** a critique of each questionnaire you find.
    a. Appeal?
    b. Clarity?
    c. Potential?
3. Start writing your own questionnaire.

B. DREAM IN THE SKY

1. How many ways can you IMAGINE asking a question?
    a. How does each "How to Ask" shape the answers you will get?
    b. Which is your favorite way? Why?
2. How many combinations of **Tense**, **Pronoun**, **Verb**, and **Object** can you create?
    a. How does each combination alter the answers you will get?
    b. Which is your favorite combination? Why?
3. What is your QUESTION ANSWER PSYCHOLOGY?
    a. How many ways do YOU use to answer questions?
    b. How do the "Ways YOU Answer" shape what YOU convey?
4. How do YOU get a person to reveal something unfavorable?
    a. To admit a mistake?
    b. To confess a fault?
5. How do YOU find out whether a person is telling YOU the truth?
6. **Write** up your dreams. **Bring** them to class. Develop them into your "How to Question Successfully" booklet.

5

Questionnaire Design Project

Ben Wright

Ten Steps

1. Think of a **topic** to research. Some would say scientific research begins with an emotion. What are you curious about? Angry about? Excited about learning? The closer the topic is to an essential concern of yours, the more interesting and vital your questionnaire project will be.

2. Formulate a rough **hypothesis** that sharpens your interest in the topic. What facts do you hope your questionnaire will bring out? What theory of yours might it support?

3. Choose a **variable**, an entity inherent in your topic that can be measured on a line from less to more. You may not know precisely what your variable is at first, but it will emerge as you proceed. Design a one-page questionnaire to measure your variable.

4. Make a 3-minute **presentation** to the class describing your interest in the topic of your questionnaire and what you hope to accomplish.

5. Administer the **first draft** of your questionnaire to yourself (take it out loud!) and then to the class. No matter how exotic your topic, use the class as a focus group. If you are researching professional wrestlers, we will respond as we imagine professional wrestlers would. Encourage class members to write comments and suggestions on your survey form.

6. Use class reactions to **revise** your questionnaire. Your ideas about revising your questionnaire will form the basis of one or more of your Memos or Project Notes.

7. Enliven your revised questionnaire by applying the **techniques of design** we explore in class. Experiment with fonts, colors, papers, and layouts.

8. Enrich your revised questionnaire by exploring the **personality** psychology it employs. Work out the psychology of the conversation that mediates your questionnaire. Is it what you want? Can you change the voice and tone to better elicit the responses you need in order to illuminate the variable you wish to measure?

9. Administer your **revised questionnaire** first to yourself (and always out loud!) and then to the class. You will revise your questionnaire more than once. Class members will be interested in following your progress.

10. Give a 10-minute **final report** to the class telling the story of your research project. By this time, we will be eager to know how your work came out and what you learned. Show us your improved questionnaire. Talk about its new strengths and remaining problems, and once again make clear the variable defined by the questionnaire.

6

Recipe for Professional Planning

Questionnaire Design Class

Marci M. Enos

The Situation: An organization has hired you to develop and conduct a research project for them. How do you begin?

First: Why?

Determine the purpose of the research. This includes:

Looking, listening and learning; doing some fieldwork about the organization; evaluate the culture and climate of the organization; identify organization goals and problem areas; find out the motives and needs of the organization — what do they want to study and why? Determine the feasibility of the scope of the study they want. Will the proposed project be supported financially? Legally? Ethically?

Second: Who? Where?

Find out as much as you can about the target population. This includes:

Who are the people you will be *surveying, observing, interviewing or questioning?* What does the organization know about them? How will you approach them, e.g., via telephone, mail, direct interview, paper questionnaire? Will they be willing or reticent? In what kind of setting will you work with them? Are there age, ethnicity, and physical constraints or gender issues that should be considered?

Third: What?

Define your variables. All along you should be thinking about "what" you need to ask or find out from the respondents. Now you should begin to design your "conversation" — the specific questionnaire or survey task. This includes:

Specifying, qualifying, quantifying! You may want to know some stable information (e.g., demographic data such as age, gender, ethnicity, political persuasion, or health status) — your *independent* variables. Be sure to gather the necessary demographic you will need to report back to the sponsoring organization.

However, your biggest challenge will be to design ways to elicit the *dependent* variables — the important ideas, events or behaviors the organization needs to understand better. Write some items, read them aloud to yourself, take them yourself – then revise; give them to friends- then revise; try them on a pilot group – then revise! Ask yourself whether they make sense, are unambiguous, and are as clearly worded as possible. Run a quick WINSTEPS analysis to see how the items behave. Revise!

Fourth: How?

Design your questionnaire. This includes:

Consider the impact of color of paper, type of paper, voice (your own and the one you want to elicit from respondents), font, use of shapes (circles, squares, triangles) and the overall style and tone of your instrument. As a former questionnaire design student once advised, "Format follows function!"

Fifth: When?

The Time is Now:

Administer your survey. Code your relevant demographic data and any other independent variables. Create meaningful labels for your questionnaire items (your dependent variables). Design a WINSTEPS Control File. Enter your data. Let WINSTEPS analyze your data. Interpret your data and organize your findings. Design a convincing report that meets the organization's needs.

Knock their socks off! After all, that's why they pay you the Big Bucks!

7

Observations, Ideas, Hunches and Half-Baked Answers

Marci M. Enos

We Notice, We Look, We Watch

We see things. We wonder about them. We think.

We Have Ideas

The ideas rattle around in our minds like seeds. They annoy us. They amuse us. They try to take root and grow.

Ideas Lead to Hunches, to Questions, to Half-baked Answers

We try to think of ways to investigate our ideas and get better answers.

Hunches and Half-Baked Answers Lead Us to Partial Questions!

This is the order in which inquiry begins: A baby shakily brings something to its mouth motivated by the half-baked answer that the item might be worth investigating. It has acquired an instinctive hunch, a partial answer to a question, which it doesn't yet know how to formulate. The question, "What is this?" comes *after* the initial experience of contact. We do the same kind of thing as adults. Partial answers and half-baked ideas which we derive from just existing in our culture — touching, tasting and indulging in experiences — lead us to reach out, like the baby, to investigate, and **then** *to formulate the questions we need in order to learn more.*

Questions Lead Us to Invent Tools So We Can Dig for Better Answers

In education research, we devise tests to investigate progress. In social science research, we devise interviews, questionnaires and survey instruments to investigate each other. In Rasch measurement, we seek a less-to-more line that will embody our hunch.

The items we choose represent our very best hunches about aspects of the idea we are investigating. We devise items for which we have (of necessity, since we don't know for sure) half-baked ideas and partial answers about how people will respond. We try to stick close to the ideas about the specific thing we are investigating and write items very carefully. *We are constructing a variable.*

We Collect Data

We compose Rating Scales so that respondents can answer our questions and, therefore, tell us their ideas about our items in a systematic way. We assign numbers to the categories of the rating scale so we can *order* the responses.

We Make a Yardstick

When we have countable data, we can estimate measures. We want to use the variable we contruct like we would use a ruler. We want to see where the people (or students or patients or busy intersections or artifacts or football predictions) line up on the "yardstick" we have constructed with our measures.

Now We Can Measure, We Can Replicate, We Can Predict!

The Rasch Model teaches us how to make, or *calibrate*, measures. We can locate the "ability" of our respondents against the "difficulty" posed by the items of our variable, just as we would locate the "ability" of a person to be tall against the "difficulty" of a point on a yardstick. The WINSTEPS computer program allows us to implement the Rasch model easily and effectively. *Once we have sturdy, independent linear measures, we can make predictions, then observe again and raise new, valuable half-baked questions leading to further investigation and knowledge.*

From a presentation given at the Midwest Objective Measurement Seminar (MOMS), June 4, 1999

8

The Drama of Survey Research

A Course Outline in Three Acts and Ten Scenes

ACT ONE: PLANNING THE DRAMA

1. Survey as a **Conversation**
    a. Social gossip to science arrow
    b. How many ways to ask a question?
2. Concept of a **Variable**
    a. Science = personal interest ⇨ social question ⇨ hypothesis ⇨ variable ⇨ yardstick
    b. From less to more on the variable line
3. **Personality** and Conversational Style of the Questionnaire
    a. Personality interaction: designer, asker, receptor, and responder
    b. Personality theory: from classic perspectives to your own formulation

ACT TWO: STAGING THE DRAMA

4. **Materials** of the Questionnaire
    a. Design psychology and aesthetics
    b. Pencil and paper, telephone, or computer screen
5. **Verbal** Language of the Questionnaire
    a. Wording of introduction, items, closing
    b. Words and personality
6. **Visual** Language of the Questionnaire
    a. Font psychology and design postures
    b. Colors, shapes, symbols and their unconscious meanings
7. **Respondent's** Psychological World (response behavior)
    a. Respondent's workload and tasks
    b. Response categories and formats

ACT THREE: INTERPRETING THE DRAMA

8. **Model** for Understanding Data
    a. Person and item labeling
    b. WINSTEPS questionnaire analysis program
9. **Inhabiting** the Questionnaire
    a. Searching for meaning in the conversation
    b. Your interests, your questionnaire, your evocations of meaning
10. Broader **Meanings** of the Drama
    a. Survey research and social science
    b. Survey research, social conversation, and the psychology of human society

2

Theories of Mind

Personality, Role and Conversation Psychology

9

Life and Mind

Ben Wright

Sanity? No gift — but an achievement of common sense and simplicity. Paying attention to everyday experience feeds common sense. But simplicity is a more demanding challenge. Everywhere we look and reach we are tempted by intrigues of complexity. Everything radiates its own different look, speaks its own different language, and seduces us to deranged confusions of infinite possibilities.

But that's no good for science, for business, or for sanity. For us to put them to useful work, all those seemingly different things must submit to simplicities — a finite number of conditions, considerations, and themes which are not only distinct and potent but exhaustive and final. The small finite number must be enough, complete.

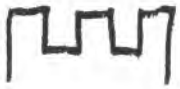
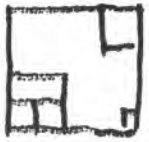
Three is my perfect number and that is what my picture of "Life and Mind" sets out. Why three? Well, we must admit it has been popular. Where would the Father and Son be without their Holy Ghost? And having that, no further need is ever proposed. Billie Holiday agrees when she informs us that "Me, Myself and I are all in love with you." Not to mention "Just Molly and Me and Baby Makes Three." Just silly rhymes, you say? But reconsider what you see in my picture. Are there more times than *past, present,* and *future?* More primary shapes than *circle, triangle,* and *square?* More body types than Sheldon's *fat, thin,* and *strong?* Not to mention reason's *abduction, deduction,* and *induction?* My own *Team, Pack,* and *Chain?* Or Peirce's *icon, index,* and *symbol?*

I can even find my own true three in my open hand. To get an idea we must be able to grasp it and then keep it in short term memory's eye while we consider its prospects and put it to work. Well, I see in my hand an index finger with which to point and an opposing thumb with which to pluck and then three fingers left to represent my pluckings. No more than three.

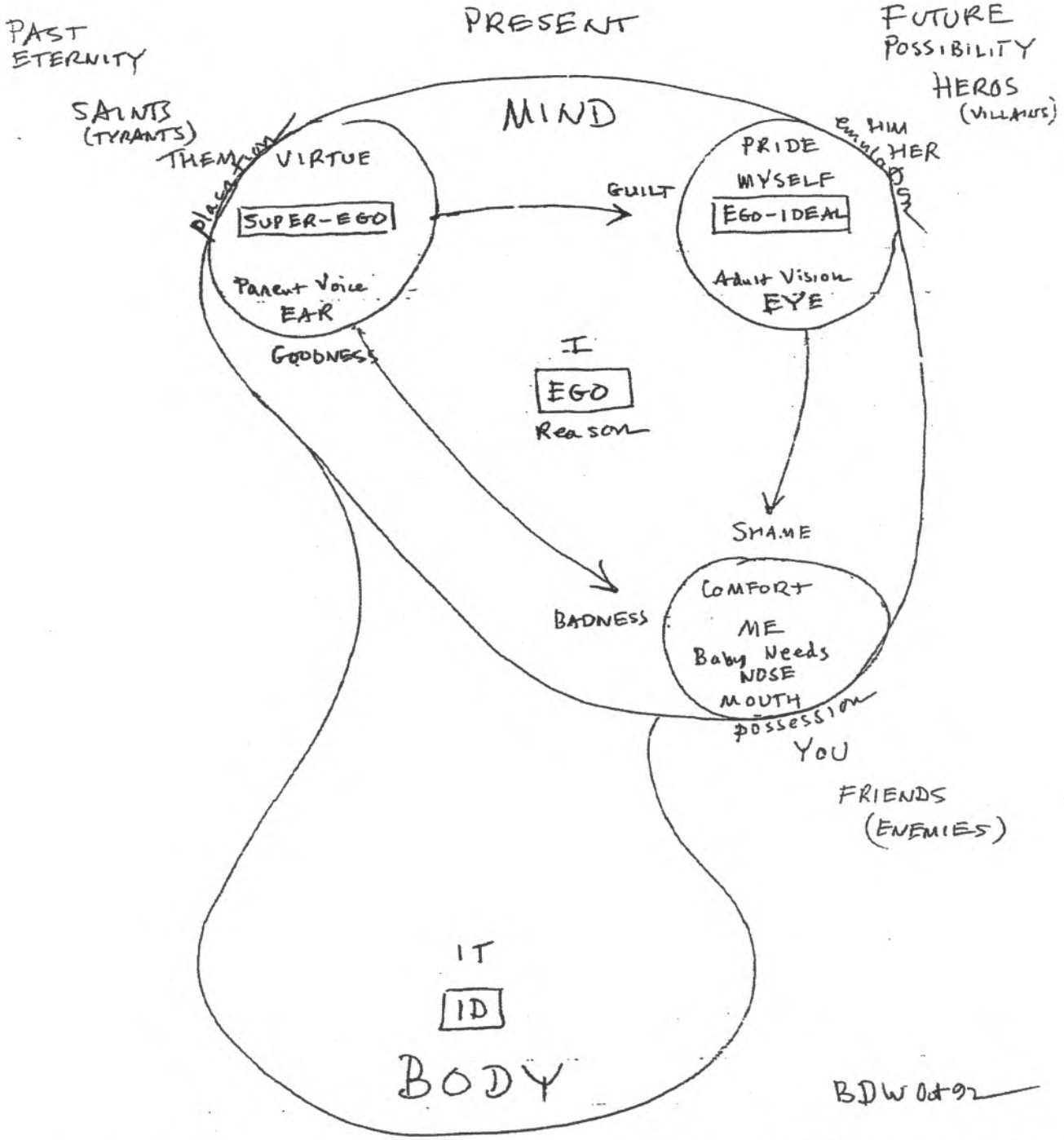
My picture also builds the composition of 3 x 3 = 9 when time and sign are played against one another. You may choose to work it differently. But I feel sure that however you maneuver, you will always be able to do it by threes, and when you work by threes you will find your mind free to think productively about achieving and keeping sanity in spite of the affluence of profusion.

[1999]

LIFE AND MIND

PRIMARY SHAPES[1]			PRIMARY COMPOSITIONS[2]			KNOWLEDGE	
Figure Basis Icon	Motion Progress Index	Creation Evolution Symbol	Connection Additivity	Penetration Integration	Coordination Divisibility	Logic Science	Disposition Personality
CIRCLE embrace  yellow	WAVES develop  brown	SPIRAL evolve  green	circle clump 	concentric circles 	circular colony 	Induction TEAM growth Biology	VISCERAL GUT comfort smell/taste ID Baby Victim
TRIANGLE form  orange	TEETH attack  red	STAR lead  gold	triangle pile 	concentric triangles 	triangular combination 	abduction PACK discovery Physics	NEURAL MIND ambition see/touch EGO IDEAL Hero Villain
SQUARE control  blue	BATTLEMENT defend  grey	CROSS complete  black	square stack 	concentric squares 	rectangular construction 	deduction CHAIN habit Government	SKELETAL BODY conscience hear/heat SUPER EGO Tyrant Saint

[1]"The UIs: Universal Images in the Visual Arts" by A.B.Vimercati & N.Bezruczko.
[2]"Composition Analysis" by B.D.Wright. In Objective Measurement, Vol III, Norwood NJ: Ablex 1996. 241-264.


PAST
ETERNITY
PRESENT
FUTURE
POSSIBILITY
HEROS
(VILLAINS)
SAINTS
(TYRANTS)
MIND
VIRTUE
SUPER-EGO
Parent Voice
EAR
GOODNESS
GUILT
PRIDE
MYSELF
EGO-IDEAL
Adult Vision
EYE
HIM
HER
I
EGO
Reason
SHAME
BADNESS
COMFORT
ME
Baby Needs
NOSE
MOUTH
possession
YOU
FRIENDS
(ENEMIES)
IT
ID
BODY
BDW Oct 92
Conscience
Ambition
Indulgence
Beloved Saint
Obnoxious Villain
Glorious Hero
Blessed Babe
where the future becomes the past and eternity is made

Physiology	Worm self/G.I. Worm (the brain below the brain)	**Kinesthesia Cerebellum**	**Cerebrum Right/left cortex**
Far	Sniff	Hear	See
Response	Wriggle	Throb	Reach
Near	Taste	Feel	Touch
	Eat/spit	Obey/defy	Keep/toss
	Id	Superego	Ego ideal

Escape

Functions of the Brain

The implications of the different formats are that they invite different parts of us to answer. In addition, decide if you want the respondents to think, feel, or act in response to the questionnaire. Consider these functions of the brain:

Left Cortex: the solid fortress of reason and logic, the conscious address of the thinking self. A small, simple orderly world often mistaken for all there is.

Right Cortex: the tumbling lair of dreams, images, tunes, wild ideas, a formless front for visceral intuition, feeling, hunch.

Back Cerebellum: the master of movement, the taker of action.

Where Does Psychological Data Come From?

Ben Wright

How do I know thee?
Let me count the ways!

1. PERCEPTION — What I see, hear, smell, feel, taste of YOU / *My impression of you*
2. RESPONSE — How YOU make ME feel as your object / *Your effect on me*
3. IDENTIFICATION — Whom I become as someone like YOU / *My identification with you*
4. PERSUASION — Who you say YOU are to ME / *Your claim*
5. THEORY — All the things YOU are that follow from MY deduction / *My theory*

How Might This Articulate Question Airing?

Mode	ACTION	REACTION
PERCEIVE	display, demonstrate, present	feel, taste, embody see, hear, smell
RESPOND	befriend, provoke, command	receive, react, reply
IDENTIFY	arouse, inspire, encourage	imitate, inhabit, obey
PERSUADE	impress, convince, seduce	swallow, defy, placate
THINK	examine, analyze, discuss	wonder, ponder, infer

[1960]

Voices to target

Hero, villain, saint. Depending on what we want to find out from people, we should think about the tone of our questionnaire and the psyche of our respondent. For example, if we want to find the hero in someone, we may want to play the role of a victim needing to be rescued or a villain needing incarceration, etc. We can't control the multiplicity that exists within individuals, but we can be aware of it. This means that we get a lot of answers from the same people, depending on which person is inside of ourselves at any given moment.

	Id	Ego	Superego
Good	*Baby* Friendly, deserving	*Hero* Exciting, ambitious	*Saint* Benign, immaculate
Bad	Victim Helpless, pitiful	Villain Selfish, tricky	Tyrant Punitive, blaming
	Worm Right Cortex – never forgets Uncontrolled animal	Cerebellum World conqueror Hero	Frontal cortex Left Short term memory

Id, ego, superego, ego ideal. The target audience and the type of content sought need to be considered when designing questions. Sometimes, we may want to pick more than one voice. For example, if the topic is smoking, we may target any one of the characters—ego, id or ego ideal. We may also want to separate the questions into two sections to allow for a psychological shift in the sections. Exhibit 1 shows a design of these psychological constructs.

- If we are talking about family or health, it is appropriate to design questions that talk to the id (us, uniting, intimate, etc.).
- If the topic is work, we may want to consider the ego ideal (being prevented from succeeding, interrupted, annoyed, etc.).
- With sports, the id / animal ambition is suitable. However, if competition is involved, we may consider addressing our audience with ego ideal messages.

Twenty-Seven Voices

Ben Wright

The combination of 3 persons (I, we, they) *times* 3 agencies (id, ego-ideal, superego) *times* 3 initiatives (feel, think, act) *produces* 27 voices in which your questionnaire may speak!

I/We/They	**INDULGED** Id	**AMBITIOUS** Ego-ideal	**CONSCIENTIOUS** Superego
FEEL	peaceful comfortable painless safe secure cozy	excited proud shameless immortal omnipotent triumphant	accepted approved righteous virtuous guiltless honorable
THINK	enjoyment entertainment recreation delight pleasure satisfaction	opportunity adventure potential feat enterprise gamble	obligation responsibility duty commitment pledge morality
ACT	play dream muse relish savor enjoy possess	exploit invent improve fascinate amaze conquer acquire	serve obey maintain enforce oblige submit preserve

16

A Psychology of Verbs

Ben Wright

	POSITIVE	NEGATIVE
EGO **I** *present* judgement decision administration	AM think do is have continue guess live	AM NOT don't think don't isn't lack stop give up die
EGO-IDEAL **Myself** *future* intention ambition work	PRIDE can try plan seek claim admire intend aspire pursue attempt display	SHAME can't fail dodge avoid lose envy evade ignore escape neglect conceal
SUPER EGO **They and them** *past* duty conscience justice	VIRTUE right true good praise believe obey accept	GUILT wrong false bad blame denounce deceive resent
ID **It, you, me, us** *eternal* comfort desire fun play	COMFORT love like want need enjoy sweet savor soft nice	PAIN hate dislike abhor suffer despise sour loathe hard nasty

Four Minds to Life

Ben Wright

	MIND'S EYE the illusion of "reality"	INDULGENCE comfort pain	AMBITION pride shame	CONSCIENCE virtue guilt
Freud	ego	id	ego-ideal	super-ego
Voices	I	It/Me/You Us, We	Myself Her/Him	Them/They
What to Learn	facts skills	self-care friendship	opportunity courage	obedience responsibility
How to Learn	listen try out	relax join in	invent discover	memorize comply
How to Teach	show/tell exercise	welcome reward	inspire embody	lecture punish
Rostam Kretschmer Type		digestive pyknic	muscular athletic	respiratory asthenic
Sheldon Body Type Personality Tone		FAT endomorph viscerotonic	STRONG mesomorph somatotonic	BRAINY ectomorph cerebrotonic
Erikson Stage		trust mistrust	autonomy shame	initiative guilt
Identification		possess restore	emulate displace	placate endure
School of Education		permissive free play	progressive democratic	traditional authoritarian
Classroom Style		child centered	learning centered	teacher centered
Contact Mode		touch	sight	sound
Message		feels YES	sees YES	hears NO
Best Teacher		friend	hero	master
Worst Teacher		enemy	villain	tyrant

[1985]

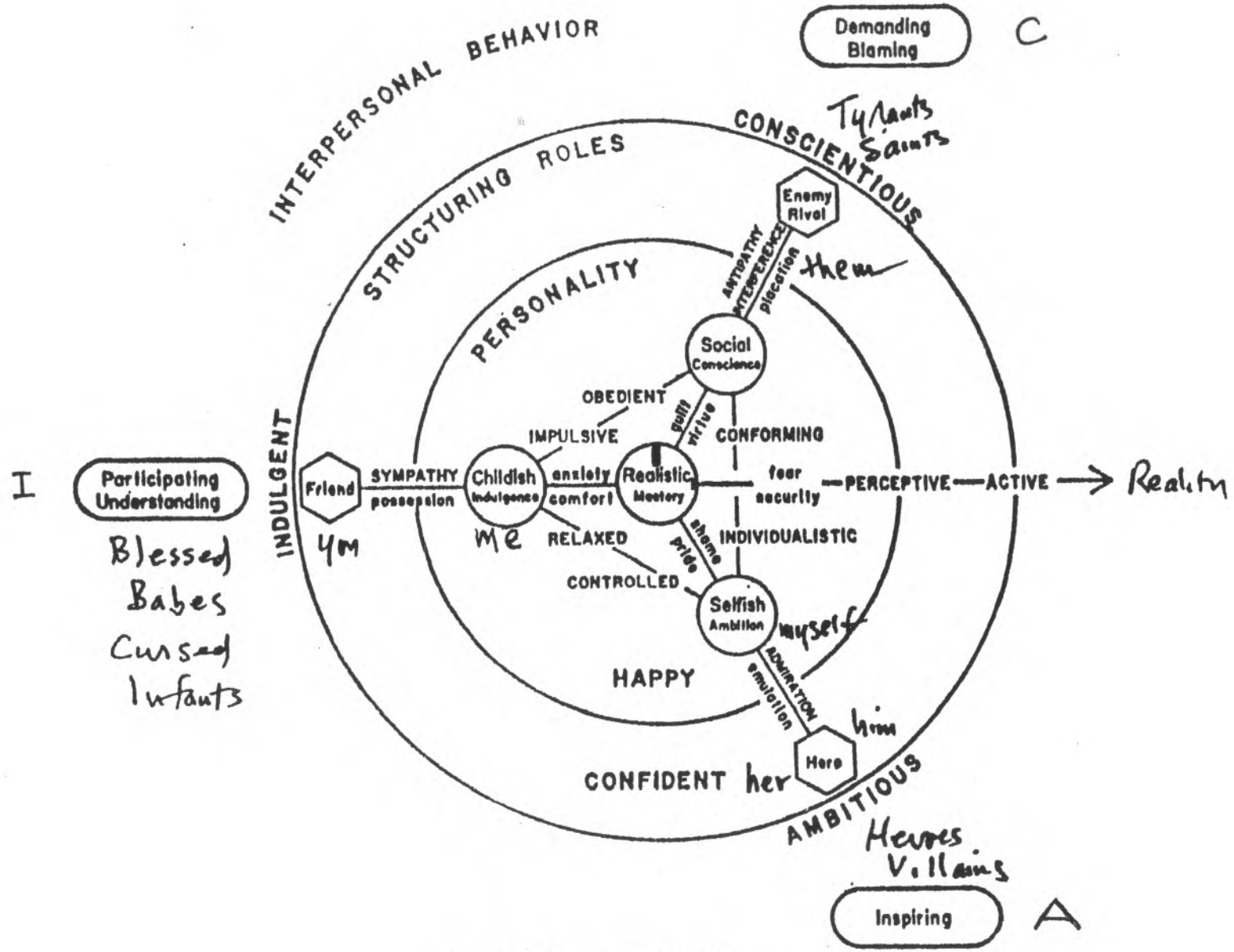


FIG. 1.—The personality theory

I C A

THREE TYPES OF PERSONS

	Indulgent	Conscientious	Ambitious
Basic conflict	Comfort vs. anxiety	Virtue vs. guilt	Pride vs. shame
Basic aim	Having relationships	Belonging to society	Becoming somebody
Inner feeling	Relaxed Impulsive Sleepy	Obedient Conforming Watchful	Controlled Individualistic Energetic
Interpersonal behavior	Self-indulgent Understanding Participating Supporting	Self-effacing Blaming Demanding Controlling	Self-enhancing Inspiring Stimulating Competing
Effect on others	Tactual Enjoyed Loved Possessed	Aural Needed Feared Placated	Visual Admired Envied Emulated
Ideals and goals	Art Play Security Friendship	Religion Duty Authority Membership	Science Work Mastery Leadership
Life style	Hedonistic Natural Sensual	Moralistic Traditional Responsible	Narcissistic Original Opportunistic

SEVEN PERSONAL FEELINGS

Two feelings found in the questionnaire, *perceptive* and *active*, describe our ability to cope with our environment. They represent the realistic agent in personality.

Three feelings, ***individualistic/conforming***, ***obedient/impulsive***, and ***controlled/relaxed***, express the inner balance among the social, childish, and selfish sides of personality. In Figure 1 personality is pictured as a triangle with the realistic agency in the center and

Conversation Psychology

Matthew Enos

Q ⇨ **P** ⇦ **R**

Every Survey ⇨ ***makes an appeal*** Conversation Psychology is the interaction of Q and R ***tells a story*** ⇦ Every Response

typical appeals ⇨

- Help me!
- Follow me!
- Venerate me!
- Don't hurt me!
- Don't blame me!
- Obey me!

Add more appeals ⬇

Baby
Hero
Saint
Victim
Villain
Tyrant

Love me!
Admire me!
Adore me!
If you force me!
Don't trust me!
Make me!

Add more stories ⬇

⇦ typical stories

Appeal *your* Q will make?

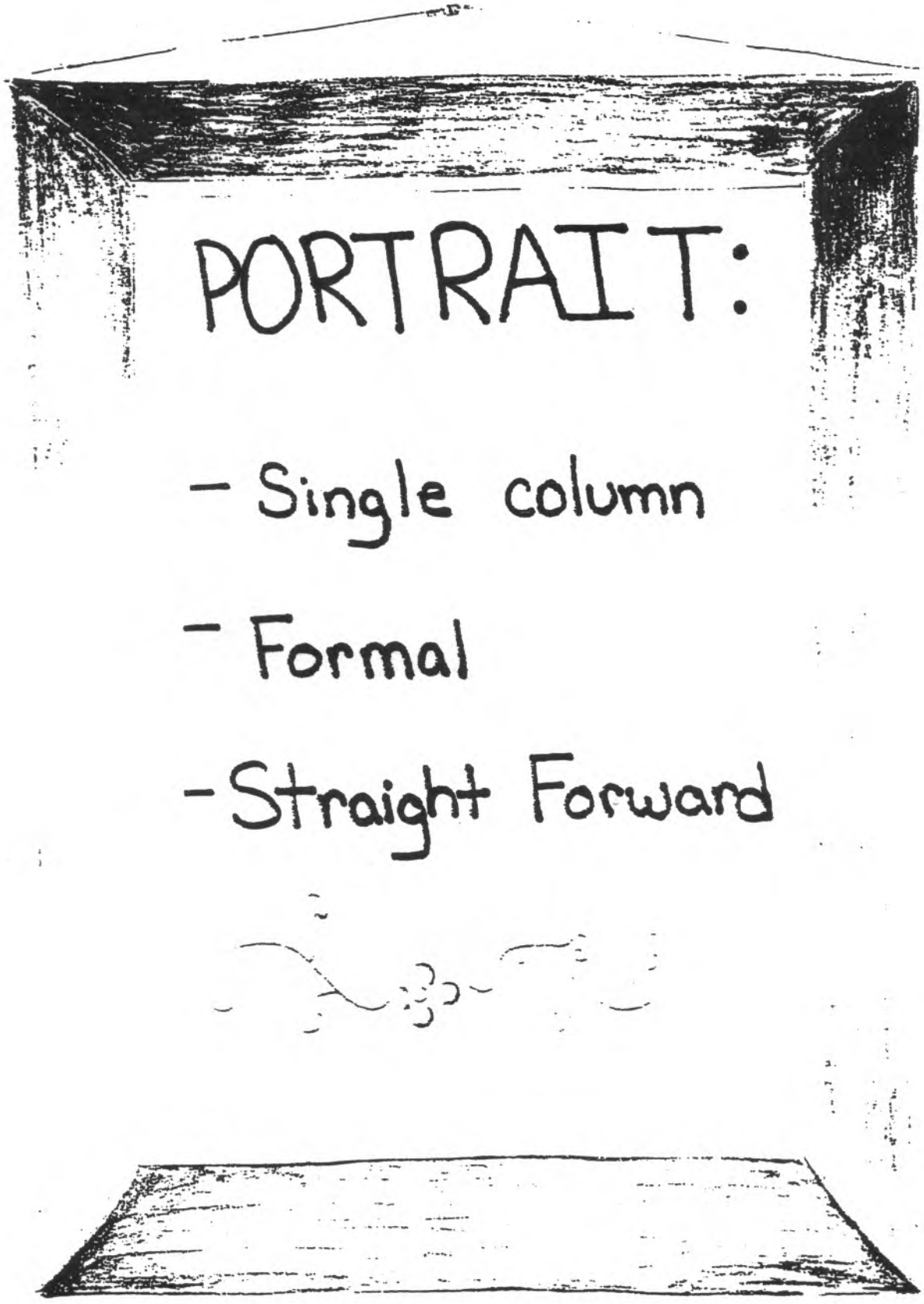
Story *you* hope to elicit?

Depending on how you construct your questionnaire, any of the Appeals can elicit any of the Stories

3

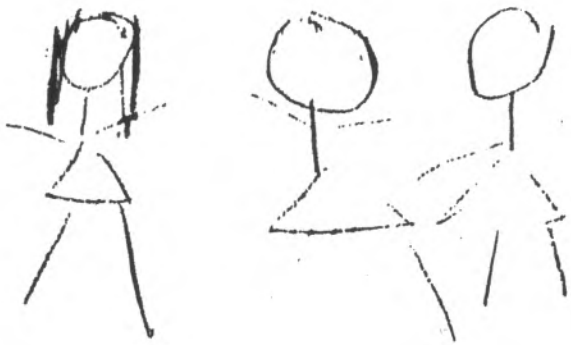
Shape

Layout, Delivery and Variables


PORTRAIT:
- Single column
- Formal
- Straight Forward

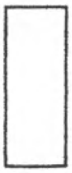
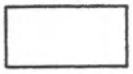
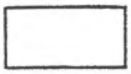
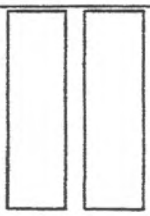
LANDSCAPE:

- MULTIPLE Columns
- LESS STRUCTURED
- FREE



- SPREAD OUT
- MORE CASUAL
- SPRAWLING

Layout

A	B	C	D
 Open →	← Close 	 Open	 Close
Right Dexterous Signifies future, open road, freer, in flow of reading	Left Signifies evil, dangerous, past, often rejected	Pyramid May release more energy (especially if it has an interesting font)	Tornado Danger, sword hanging over our head
E	**F**	**G**	**H**
			
Appropriate for longer questions. I.e. hypothetical dilemmas	Seems like a weight / heavy burden is waiting at the bottom.	Nice & short. Open.	The weight is smaller but is still waiting at the bottom
I	**J**	**K**	
			
Creative. The little triangle holds the instructions. Closed / inverted or awkward.	More open than "I"	Appeals to left brain too much	

Role	BABY	HERO	SAINT
Persona	Adorable me, you, we	I, myself	Them
Color of paper	Pastel pink or blue	Saturated yellow	Heavenly blue, white
Color of type	Medium green or blue	Flaming red	Gold, navy blue, purple
Style of type	Soft and delicate	**Bold and san-serif**	*Curly script with serifs*
Role	VICTIM	VILLAIN	TYRANT
Persona	Poor little me	We	You
Color of paper	Grey, pink	Tan	White
Color of type	Brown, red	Brown, black	Black, dark red
Style of type	Light and narrow	*Curly, disguised*	**BOLD & ALL CAPITALS**

Design of Questions:

- Keep in mind the "role" played by the developer and the "role" desired of the respondent – baby, victim, hero, villain, saint or tyrant. The "role" is dictated by the response desired and defines the relationship between developer and respondent. Although there are 15 possible pairs of "roles," only 4 or 5 elicit rich data.
- Develop questions that are specifically targeted to the purpose of the questionnaire.
- Develop questions that measure each variable under study, but do not look for a multidimensional result. More dimensions cause more confusion. Rather, develop questions that lead to different aspects of a single dimension.

Character	 	 	 
Color	**RED**	Baby Pink Light Blue	White **Black**
Font	TALL **WIDE**	Soft Weak	Airy **Heavy**
Shape	△	○	□
Format	Page	Booklet	Form
Voice	Rich Dominant	Soothes Pleads	Sonorous Bellicose
Tense	⇦	⇳	⇨
Mode	Should/Will	Do/Am	Did/Was
Marks	☑		■

Instructions & Ease of Use

Instructions to use the scale. There are many ways to instruct respondents how to fill out the scale. We can mix and match from the following list, but consider the implications, some of which, are listed here.

	Could imply:		***Implies***		***Implies***
Circle	*A tad more work than filling in, but a reasonable request*	**Your**	*Personal You Focus*	**Opinion**	*Anything is good*
Mark	*As it says, write in what I think*	**The**	*Impersonal Implies 'one of'*	**Answer**	*Right / wrong*
Check	*Get it over with*	**A**	*Impersonal*	**Response**	*Right / wrong*
Fill	*There will be an oval that I need to shade fully as in the standardized tests in school*	**In the**	*Versus out*	**Category**	*Neutrality*
Put	*A dictatorship or like I'm lifting a load that will go somewhere*	**An**	*Any answer Impersonal*	**Choice**	*Plurality, many ways to go with this, Freedom Liberty*
Indicate	*Let us know*	**How you**	*Personal You focus*	**Feel**	*Touchy feel-y Emotional*
Write	*A lot more work than I though*	**In**	*Not out*	**Think**	*Cerebral Repress emotions*

Labeling the response columns. When the scale consists of numbers, the corresponding meanings should be placed on top of the response columns so that respondents don't have to keep referring back to the instructions as they are answering. Another perhaps more optimal consideration is to use the same scale titles that would head the response columns throughout the scale to every question.

Before administering your questionnaire, consider the following…

Here comes a

Questionnaire  You

What does it look like?

- Cluttered
- Time-consuming
- A burden
- Long
- Exciting
- Cute
- Funny
- Intriguing
- Simple
- Soft
- Hard
- Yummy
- Nuisance

Ask yourself (before administering):

- What does the questionnaire look like?
- What does it call up into you?

Before you read the questionnaire, it will tell you something

How do you respond to a questionnaire?

1. Is this good to eat?
2. Is this profitable to eat?
3. What do I get out of this questionnaire?
4. Is this about me?
5. What will this say about myself?
6. Will this bring harm to me (danger, interference, poison)?

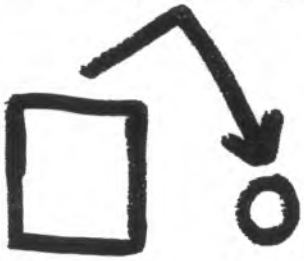
When your respondents read your questionnaire, what will be aroused within them?

SHHHHHHH! Questionnaire Being Given: Body Placement

Now you should have a well designed questionnaire, full of color and life.

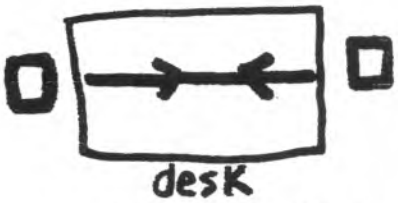
The way you distribute this questionnaire can influence the results you get. Where you are in relation to your respondent can put them at ease or on edge.

How would you distribute your questionnaire according to the following position placements?



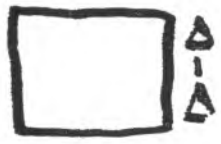
Posture of Standard Academic Questionnaire

Imposing, authoratative



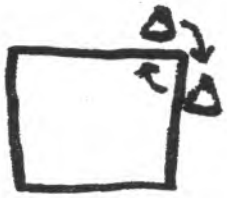
Conversation

- clean, conventional



Side-by-Side

Comfortable, intimate



Corner

- "old friends" or - plotting

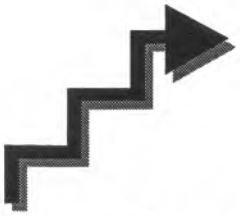
"Psychoanalytic"

- watching, correctin

○ → soft

△ → edgy, conspiratorial, hard

□ → square, stiff



Steps Leading to a Straight Line: Constructing a Variable

Social science involves the study of variables and the aspects, attributes, events, and behaviors that compose it. In social science, we move from ideas and observations to counts, measures, and predictions. The main idea, event, activity, behavior, or dimension on which we focus our observations we call our "variable."

A variable "varies" — the main idea stays the same, but its range of attributes can be arranged along a single line. There can be more of it or less of it. It can be weaker or stronger, smaller or larger, sicker or healthier, pro-something or anti-something. We study a variable because we want to measure its range and study the effects of other events on that range.

1. **Can you describe your variable in just a few words, e.g., "patient progress after a certain treatment," or "people's attitudes toward politics?"**

2. **What theory or ideas underlie your research interest and your selection of a variable?**

3. **Think about what a "low performer" would be on your variable scale. Describe the kind of person, events, behaviors, etc., which would be at the beginning, or *lowest* end of your variable scale.**

4. **Describe a "high performer," a person, event, set of behaviors, etc., that would be at the *highest* end of your variable.**

5. **This is the hardest. Describe persons, events, etc. that would be in the *middle* range of your variable scale.**

_____

_____

_____

6. **Here (or on a separate sheet) write three items exemplifying the high, middle, and low range of your variable. (You may already have survey items from your ongoing research.) Number each item.**

High end items (hard to agree with)

_____

_____

_____

Middle range items

_____

_____

_____

Low end items (easy to agree with)

_____

_____

_____

7. **Below is a horizontal line representing your variable. Mark the end points in a way appropriate to your variable, e.g., less - more, easy - hard, sick - healthy. Arrange your items (by their numbers) along this variable line where you think they belong. (In other words, how do you think respondents will react to your items?) If you have trouble figuring out where an item belongs on the line, consider whether it is actually targeted on your variable.**

⇩ ⇩

You now have the framework for building an instrument with a linear array of hierarchical survey items that will elucidate your variable.

Constructing A Survey Instrument[1]

Matthew Enos

Anyone involved in academic psychology, whether as student, teacher, or writer, soon develops a curiosity about the topic of emotion. Such curiosity can lead in many directions, since psychology may be as unresolved about emotion as it is about any subject in the field.

I have been interested in questions of the nature and workings of emotion for a long time. As is true for most observers, however, this interest remained essentially philosophical, with empirical observation seeming out of reach. Two writing projects, a Study Guide for a psychology textbook and the foreword for a new study of emotion, required a closer look at the issues involved in understanding emotion processes. But the question remained — how could one get beyond philosophical speculation to a more objective examination of the subject?

DEVELOPING A RESEARCH INSTRUMENT

Students in my psychology classes provided a natural source of ideas about studying emotion. In an initial foray into the subject of emotion, I asked these students to write answers to three open-ended questions (written on the blackboard) about their immediate emotional state, how often they experienced anxiety, and what anxiety felt like to them. Responses were individually interesting, but, as is typically the case with open-ended questions, difficult to bring into any kind of focus or order. A more structured instrument was needed.

Toward an Objective Measure of Emotion

That instrument (see "Emotions" questionnaire attached), which I am using here to illustrate the process of writing a survey, required an evolution of several stages of development. At the time, I was participating in a series of courses on questionnaire design and measurement problems, practice, and theory offered by Professor Benjamin D. Wright at this university. The ideas that arose from these courses vitally affected the development of the research instrument and the subsequent analysis of the data that was collected.

I developed a 25-item survey form with a four category rating scale. I asked my students (n116) to rate a mix of emotion words (e.g., "bored") and statements about emotion experience (e.g., "sudden, intense understanding of everything"). Unhappily, the results were ambiguous, nor did the data point in any one direction. The questionnaire lacked a common variable. Individual items may have had some potential for usefulness, but they were not embedded in a

[1] Excerpted from my doctoral dissertation, "Defining Emotion with Measures of Intensity and Range of Experience," The University of Chicago, August 2001.

context of similar items that could measure respondents on a line from less of some quality to more of it. Only the several emotion words and states on the form were interrelated.

It is common practice for people to describe emotion experience with single word descriptors. "I was so happy." "It made me angry." "That's disgusting!" According to the theory that informed this research, emotions are momentary and transient, quickly occurring and just as quickly disappearing. It seemed appropriate to identify and tabulate them with one-word descriptors. The logical first question would be how frequently these emotions occur in any person's experience. Consequently, a decision was made to construct a list of emotion words and submit those words to subjects' judgements of occurrence as measured by a rating scale of frequency.

The difficulty in defining an emotion precisely is the common psychological problem of dicing fluid experience into discrete bits that can be named and considered intellectually, as when subjects in this study ponder, "How frequently do I experience anger?" Humans must name things in order to think and talk about them. It seems quite likely that emotions may actually be more like energy churning in the brain than discrete entities jostling with each other for expression.

A List of Emotion Words

The next step was to construct a list of emotion words that were in everyone's experience and that would explore a range from commonly to rarely experienced. The goal was to come close to a list of manageable size that would extend across the range of emotions most people experience. The starting point was an appendix of common emotion terms in Daniel Goleman's recently published *Emotional Intelligence* (1995). Goleman accumulated nearly 100 emotion words and assembled them in eight emotion families: anger, sadness, fear, enjoyment, love, surprise, disgust, and shame.

From the first analysis of pilot study data it became apparent that these 50 emotion words fell into two groups, positive and negative. Since the final list was 50 words, it seemed logical to construct a list of equal numbers of positive and negative words. That could not be achieved without doing harm to the integrity of the list. In common usage, there seem to be more negative than positive emotion words. After four pilot studies, I settled on a final list of 20 positive and 30 negative emotion words.

During the pilot studies, I also made changes in several areas of grammar and formatting of the list of emotion words. To the untrained eye, these changes may seem trivial. Experience suggests, however, that there are subtle changes in what Professor Wright terms the "conversation" that any questionnaire creates between researcher and respondent, and that these changes affect the nature of the subjects' responses. The target is the aspect of the subject's experience that most accurately reflects the variable the researcher is attempting to measure.

I revised the grammatical form of the words was as well. Initially, the emotion words were expressed as adverbs or adjectives: Angry, Ashamed, Bored, Curious, etc. In order to get closer to the state being measured, the emotions words were changed to nouns: Anger, Shame, Boredom, Curiosity, etc. A related change was to place the terms in lower case instead of capitalizing them. Thus they became anger, shame, boredom, curiosity, etc. It was hoped that this change would

make the emotion words seem friendlier — less threatening, more intimate. Early on, the words were changed from plain type to boldface for more arresting reading.

Another change in format was dropping the item numbering. I hoped that this change would make the rather long list seem less daunting and more inviting. Item numbering on questionnaires, typically employed almost reflexively, is essentially a bureaucratic procedure of some use to the researcher but usually with little or no vital relationship to the respondent. Other design features are examined in the following section.

QUESTIONNAIRE DESIGN

The design of the research instrument, which I named the Experience of Emotion Scale (EES)™, was based on new ideas about survey research emerging from courses at this university. Teaching and research in the area of questionnaire design is making clear the wide-ranging effects of even apparently minor aspects of questionnaire design. Administering essentially the same items, but varying the design aspects of a questionnaire, can yield surprisingly different results. Consequently, it is necessary to consider the role of a number of design elements in survey research and consider how they were applied to the present study.

A Theory of Survey Research

Most texts on questionnaire design offer a straightforward, somewhat mechanical understanding of the subject.[2] It would appear that most questionnaire designers follow the same approach. Although care may be taken to ask the right questions, the basic idea is that the researcher writes the questions and the subjects provide the answers. The fact that questionnaires are usually administered by third parties, at some distance removed from the questionnaire designer, reinforces the feeling of impersonality in the task. But a much richer, multi-dimensional approach is available.

The psychology of conversation. What is poorly understood in the world of questionnaire design is that a complex and psychologically rich dynamic takes place in any survey research undertaking. In his courses at this university, Professor Benjamin D. Wright terms this interaction a "conversation" between questionnaire designer and research subject. He points out that the reality of the conversation demands knowledge of a psychology of questioning on the part of the researcher. Wright refers to this new area of knowledge as a psychology of communication.

Personality theory. At the heart of communication psychology there must be a personality theory that can explain the "conversation" between researcher and subject. More often than not, even thoughtful researchers are unaware of the personality theory that informs their own work. Yet if every questionnaire represents a conversation between two people, there must be universal personality dynamics that allow the conversation to take place. Without common personality variables, no survey could be born.

Professor Wright laid the foundation for such a personality theory in *Hero, Villain, Saint: An Adventure in the Experience of Individuality* (1989), written with fellow psychologist Annette M. Yonke, which uses religion, myth, and biography to explore the inner struggle between personal

[2] For an example of a good introductory text, see Arlene Fink, *The Survey Kit 2: How to Ask Survey Questions* (1995).

ambition and social conscience. Wright's current personality paradigm is characterized by a matrix of three columns and two rows. The columns represent a basic triad of human striving, while the rows represent the fundamental positive and negative expressions of that striving. The classic example is Freud's tripartite arrangement of the mind into id, ego, and superego and their expression in the constant struggle of eros and thanatos, life and death, seen in 'civilization and its discontents.'For Wright, life in its simplest terms can be seen as the interplay of six personality roles. Using classical mythology as a convenient way of creating universal symbols, Wright names these archetypes the "baby," the "hero," and the "saint" in their positive emanations, and the "victim," the "villain," and the "tyrant" in their negative expressions.

Wright and Yonke show how these themes appear throughout history and literature. The legends of Oedipus and Joan of Arc are classic examples of unprepossessing persons who traversed this tragic route: first heroes whose courage and daring saved their people, then dangerous villains who must die because they seemed to bring disaster, and finally venerated saviors proclaimed saints by later generations.

As Wright sees it, every questionnaire represents an intertwining of at least two of these themes, one for the researcher and one for the subject. Perhaps the typical bureaucratic questionnaire, with its crisp instructions and no-nonsense questions set in a formal typestyle and printed in black-and-white, can be seen as a tyrant researcher or agency demanding information from cringing but compliant victim subjects. For any survey research, the psychology of communication is employed to reveal how the research must speak to the subjects in order to elicit that aspect of human experience with the greatest likelihood of defining a variable capable of answering the question posed by the research.

Goals of the Research Instrument

My objective was to get as close as possible to the actual emotion experience of the subjects, with as little filtering by culture and morals as possible when words are read from a printed questionnaire. To the extent that subjects answered that they "never" experienced many of the emotions, the research, in a sense, "failed." Fortuitously, the misattribution of "never" to any of these words may itself constitute a finding of some importance. In questions where blood constituents hold the answer, physicians would rather draw blood for analysis than administer a questionnaire concerning what the patient "knows" about his or her blood.[3] While there are physical correlates of emotion experience, there is no "blood test" for emotion. Functional Positron Emission Tomography (fPET) scans show that emotion is going on, and in what part of the brain it is occurring, but they do not tell much about the emotion itself.

My goal was to arouse subjects' interest, curiosity, and willingness to participate without provoking defensive or false responses. Applying the Wright model of questionnaire psychology, what was wanted was a saint inquiring of a baby. The saint, with only your best interests in mind, tells you, "Look how interesting you are! We need to know your most elementary processes. I wonder how often you experience these emotions?" To the extent that this plea works, the baby replies, "I know you will protect the responses I share with you, so here goes. I'm even going to tell you about the bad feelings I sometimes have." If this is the fundamental

[3] In many areas of lifestyle research, where no one physical factor holds the answer, physicians do rely on survey research.

scenario of the survey, then every aspect of the questionnaire should be carefully designed to fit the play.

But are they? This aspect of questionnaire design may be as much an art as a science. There are few hard-and-fast rules governing artistic design elements like typeface, borders, use of color, etc. In addition, there is the personality of the researcher to reckon with. Is the present questionnaire "saintly" because the researcher happens to be somewhat compulsive and enamored of neatness? Or does the orderliness of this questionnaire betray the tyrant lurking beneath? "If you don't answer this neatly crafted questionnaire correctly you are in big trouble!" And is it really messy id babies whose reports of feelings we want, or is it instead the measured considerations of ego-ideal adult heroes doing their best to assess what is really going on in their psyches?

THE EXPERIENCE OF EMOTION SCALE

Deconstructing the elements of questionnaire design in the Experience of Emotion Scale, with attention to the conversation psychology and personality theory variables involved, the following catalog of elements is revealed.

Layout and Design of the EES

The final scheme chosen was to offer six categories of frequency, labeled "Never," "Rarely," "Sometimes," "Often," "Very Often," and "Always," in that order from left to right. Respondents were asked to circle abbreviations in six columns beneath the full words just quoted. The abbreviations were N, R, S, O, V, and A. Subjects were asked to provide a modest amount of information "About yourself." These items were gender, age (in four categories), and ethnicity (in five categories).

Since a fairly significant workload of 50 items to evaluate and some reflection about frequency of occurrence was placed on the subjects, I wanted a clean design that would facilitate efficient answering. An open design with few barriers was attempted. After noticing a number of transposition errors (slipping onto the wrong row) in the pilot studies, I added a five-percent gray fill to every other item to guide the eye across a long line. Errors dropped dramatically.

In earlier projects, I often used "check" boxes for responses.[4] Wright advocates a "circle the answer" strategy in filling out questionnaires. He suggests that this approach allows and even requires the subject to embrace the answer chosen, and thus becomes a more genuine, more heartfelt, and more credible response. Here respondents were asked to circle a letter that was an abbreviation standing for the response, as in "N" for the response "Never." Would it be a "better" response to circle the entire category label? This question is still open to debate.

The ideal questionnaire fits on a single page. Most subjects seem to take those limits as reasonable and doable. In this case, the 50 emotion words could only have been fitted onto one page at the cost of small type with no leading and a dense and crowded design. The only reasonable solution was to use two pages. By printing the two pages back-to-back, I at least

[4] Is this personal preference the reflection of a bureaucratic mind, more comfortable working inside the box?

avoided the multiple-page and stapled-pages problems. Subjects had only a single piece of paper to manage.

With a subject like emotion, which is ambiguous enough itself, I needed the greatest amount of clarity possible. All of the elements discussed above were intended to add up to a task that was clear to respondents. The use of the nominative case and present tense throughout was intended to reinforce the clarity and immediacy of the questionnaire task.

Textual, Graphic, and Color Elements

The typical survey form is presented in a single typeface printed in black ink on white paper. Closer investigation of respondents' visceral and intellectual reactions to such questionnaires — and to more inventive competitors — reveals that these features are more important than is commonly recognized. In particular, the psychology of color has far greater influence on respondents than many researchers realize.[5] The Experience of Emotion Scale attempted to take advantage of this more sophisticated understanding of survey form design.

Fonts. The body text of the questionnaire is set in 10-point Times, a serif font whose lineage tracing to the London Times is apparent in this compact yet highly readable typeface. With a long list of emotion words and several demographic questions to answer, there was potential for a cluttered and crowded feeling that might arouse anxiety on the part of the subjects. The emotion words, simple nouns, were placed in lower case for friendliness and a non-threatening feel. Response categories, the targets for which the subjects had to search, were offered in abbreviations of the category names. They were placed in capital letters to seek attention, but reduced to 9-point type so as not to overwhelm. Both emotion words and response targets were placed in boldface to enhance readability.

I chose Arial,[6] a modern sans serif font that is clean and neutral, for non-text elements of the questionnaire. The title is in 14-point Arial; headers and footers are in 9-point Arial (a copyright line is in 8-point Arial).

Graphics. No graphics were used (except for a finger pointing to the instructions in an early edition) and this is regrettable. Pictures can help respondents enter the mood of the questionnaire, but they must be chosen with care not to trivialize or burlesque the seriousness of intent in the survey. In this case, no good graphics came to mind, even though they might have lightened the tone and mood of this questionnaire.[7]

Color. Several shades of tan and ivory were tried before settling on canary yellow paper. It was hoped that this color would convey warmth, lightness, and friendliness. But color is always somewhat subjective. One respondent filled out the questionnaire and then scrawled, in apparent

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[5] Living in a land where advertising is supreme, the importance of color should be obvious. Yet color is not used much, and not very creatively. See any magazine or Sunday newspaper advertising insert for creative use of color in an arena where sales are the bottom line.

[6] Arial is used for the headings in this paper. The body text is in Palatino. I think these two typefaces work well together.

[7] Comic book art is enjoying a resurgence of popularity and is increasingly used in advertising and journalism. Do we need an occasional dash of comic book graphics in our questionnaires?

irritation, "Don't use yellow again!" Nevertheless, a survey on colored paper is usually better than a black and white one with its suggestion of "For Office Use Only!"

Specific Features of the EES

A detailed analysis of the Experience of Emotion Scale illustrates an attempt to design a questionnaire with sensitivity to the emerging body of knowledge about effective questionnaire design.

Title, headers, and footers. In my opinion, titles, although usually not really necessary, are useful and comforting, somewhat like signposts on a familiar roadway. But titles should not threaten ("Let's Find Out What You *Really* Feel!") and should only provoke ("Forbidden Feelings!") when a deliberate push is deemed necessary (I didn't want either). The simple word "Emotions" was chosen as a plain, neutral, yet faithful representation of what the questionnaire was about.

Since the list of emotion words continues on the second page, the header is actually a repetition of the category labels heading used on page one, and therefore in the same font and style. It is unreasonable to expect subjects to remember the category label codes or to expect them to return to the first page to be reminded. The page-one footer tries to gently remind subjects that the questionnaire continues on the reverse side. On page two, the footer identifies the institutional origin and authorship of the questionnaire and asserts copyright privileges. A code, for the convenience of the researcher, identifies the edition and date of the questionnaire.

Introduction and closing. As in the case of instructions, there is a powerful tendency, again perhaps more pronounced in academic surveys, to include an elaborate explanation of the purposes of the survey and the needs of the researcher. The obvious danger is overexplanation. Again, as in the case of instructions, most respondents probably ignore these introductions.

The last line in the body of the questionnaire offered a "Thank you for taking this survey." On many questionnaires, thanks are tendered as part of the introductory section, a presumption that risks the possible offense of the typical form letter, which begins with the phrase "thank you in advance for your cooperation." Considerable debriefing of questionnaire respondents indicates that subjects do appreciate being thanked for their efforts, which, as noted earlier, can be significant.

Instructions. There is a powerful tendency to overexplain the instructions on a questionnaire. Classroom teachers, who enjoy the luxury of repeating themselves, may be especially guilty. In a society in which survey research has become part of the general vocabulary of all literate persons, most questionnaires would be answered quite adequately without any instructions. In fact, this is what happens in practice. Debriefing of survey subjects typically reveals that many, if not most, did not read the instructions at all. Yet the designer, writing from the bunker of a faculty office, cannot help worrying whether subjects will really understand what to do.

I gave a simple instruction: "How frequently do you experience each of these emotions?" Then a note of distrust crept in. Instead of the simple "Circle one," I could not resist explaining: "Example: 'I feel **amazement** . . .' [circle how frequently, from 'Never' to 'Always']." I tried several variations of the instructions during the pilot studies. None seemed completely immune to misunderstanding. The final result was both a compromise and an equivocation.

The equivocation results from solving one problem by simply turning away from it. That is the question of what time period was intended. There is no satisfactory way to quantify emotion experience, as in "times per day" (or week, etc.). People simply cannot gauge something like emotion experience this finely. In the view of emotion that underlies this study, they should not be able to do so. It seems likely that, at a less conscious level, these momentary experiences of emotion must be happening all the time, including during sleep. Any one emotion actually may be experienced hundreds, perhaps thousands of times per day. But few of these experiences will be consciously remembered.

The assumption in the instructions is that people have a sense of the relative frequency of their experience of emotions, and that is what they are actually reporting. If this is the case, any attempt to delineate an arithmetic of times-per-period would only confuse. The overwhelming majority of subjects seemed to accept the proposition that the task was clear enough.

Response categories and category labels. Perhaps no single aspect of questionnaire design, save writing of the items themselves, is as important as the construction of the response format. The number, labeling, and arranging of the response categories sets the language by which subjects respond to the items. Having experimented with several versions of these elements, and remaining less than completely satisfied with the final versions chosen, I am painfully aware of the complexity and seriousness of this area of questionnaire design. (See my related paper "The Language of Response.")

The final scheme chosen was to offer six categories of frequency, labeled "Never," "Rarely," "Sometimes," "Often," "Very Often," and "Always," in that order from left to right. Respondents were asked to circle abbreviations in six columns beneath the full words just quoted. The abbreviations were N, R, S, O, V, and A.

Demographic information. Subjects were asked to provide a modest amount of information "About yourself." These items were gender, age (in four categories), and ethnicity (in five categories).

Designing Your Own Questionnaire

In a related paper on response categories and labels I propounded ten "rules," but had enough sense to put quotation marks around the word because there is such a significant degree of subjectivity in the area. On designing questionnaires, I wouldn't even dare consider using the word "rules." In fact, one of the enduringly fascinating features of a course on questionnaire design is the endless variety and surprising originality of thoughtful questionnaires.

I do hope that this paper may have directed your attention to at least a few of the many aspects of questionnaire design. My solutions were not the only ones, and maybe not even the best ones, to the problems we all encounter when designing questionnaires.

Now it is your turn. It will be exciting to see what you come up with.

Emotions

How frequently do you experience each of these emotions?

Example: "I feel **amazement** . . . " [circle how frequently, from "Never" to "Always"].

Emotion	Never	Rarely	Sometimes	Often	Very Often	Always
amazement	N	R	S	O	V	A
anger	N	R	S	O	V	A
anticipation	N	R	S	O	V	A
anxiety	N	R	S	O	V	A
apprehension	N	R	S	O	V	A
boredom	N	R	S	O	V	A
calmness	N	R	S	O	V	A
competence	N	R	S	O	V	A
contempt	N	R	S	O	V	A
contentment	N	R	S	O	V	A
curiosity	N	R	S	O	V	A
dejection	N	R	S	O	V	A
delight	N	R	S	O	V	A
despair	N	R	S	O	V	A
disgust	N	R	S	O	V	A
distress	N	R	S	O	V	A
dread	N	R	S	O	V	A
ecstasy	N	R	S	O	V	A
embarrassment	N	R	S	O	V	A
envy	N	R	S	O	V	A
excitement	N	R	S	O	V	A
fear	N	R	S	O	V	A
fury	N	R	S	O	V	A
grief	N	R	S	O	V	A
guilt	N	R	S	O	V	A
happiness	N	R	S	O	V	A

More emotions on back . . .

Emotion	Never	Rarely	Sometimes	Often	Very Often	Always
humiliation	N	R	S	O	V	A
interest	N	R	S	O	V	A
jealousy	N	R	S	O	V	A
joy	N	R	S	O	V	A
loneliness	N	R	S	O	V	A
love	N	R	S	O	V	A
lust	N	R	S	O	V	A
pride	N	R	S	O	V	A
rage	N	R	S	O	V	A
resentment	N	R	S	O	V	A
revulsion	N	R	S	O	V	A
sadness	N	R	S	O	V	A
satisfaction	N	R	S	O	V	A
self-pity	N	R	S	O	V	A
serenity	N	R	S	O	V	A
shame	N	R	S	O	V	A
shock	N	R	S	O	V	A
shyness	N	R	S	O	V	A
surprise	N	R	S	O	V	A
suspicion	N	R	S	O	V	A
terror	N	R	S	O	V	A
thrill	N	R	S	O	V	A
trust	N	R	S	O	V	A
worry	N	R	S	O	V	A

About yourself (please check):

___ Female ___ Male

___ 18-25 ___ 26-35 ___ 36-49 ___ 50+

___ African-American ___ Asian ___ Latino ___ White ___ Other _____

Thank you for taking this survey.

4

Techniques

Colors, Fonts, Word Processing and Response Categories

Excerpt from

Color Guide for Marketing Media

Louis Cheskin

1954

MacMillan

Psychological Aspects of Color

The spectrum is physical; the materials out of which we prepare pigments are chemical; the perception of color is physiological. The major importance of colors to us, however, is in their psychological effects.

Light and color have always played a prominent role in human affairs. Most primitive peoples of Asia and the ancient Greeks associated colors with the sun and with divinity. They represented life and goodness by bright colors, death and evil by black. They used brilliant colors almost everywhere and identified them with godliness.

In our day we are immersed in the same world of color but have gained a more systematized knowledge about it. Accordingly we are in a better position to use color for specific objectives.

Though we occasionally hear people express strong likes and dislikes for certain colors, the impact of color sensations is usually made on the unconscious. People are not often aware that colors have a tremendous influence on them. They seldom realize that a person may be unconscious of the colors around him and yet be powerfully affected by them with regard to mood, temperament and behavior.

We should not forget that color sensations sometimes produce physical reactions. People often feel cold in a blue room and warm in a red room without realizing that colors, not physical temperature, are responsible for the difference in effects.

Colors are divided into two distinct psychological groups —cool and warm. The cool colors are blue or predominantly blue in cast. The warm colors are red or predominantly red and yellow. Complementary colors are warm-cool pairs.

Significant in its bearing on human well-being is the fact that cool colors have a sedative effect and have proved calming to highly nervous people who feel uncomfortable in an environment of warm colors. Less excitable people become depressed in surroundings of strong blue and have their

spirits lifted by reds and yellows. There is a strong tendency for most persons to seek unconsciously a balanced diet of calming and stimulating colors by means of surrounding themselves with tints and tones derived from both cool and warm hues.

Of greatest value is the knowledge that colors should be used in complementary pairs, because the relationship between complementary colors is physical, physiological and psychological. Complementary hues comprise the total visible spectrum, are physiological pairs and provide a psychological balance of warmth and coolness. In other words, complementary colors are physically, optically and psychologically balanced.

The easiest way to understand the nature of color is to recognize that every hue has a mate and a family. The complementary hue is the mate and the related values—shades, tints and tones—are the family.

According to traditional aesthetic concepts, use of complementary colors is in good taste. Actually, acquired taste has little to do with this preference, since, for physical and optical reasons, it is as natural for normal people to like complementary colors as it is for them to walk upright. Where complementary color combinations are not preferred there is likely to be or to have been some kind of special conditioning or an adverse economic factor. This is indicated by the fact that many primitive peoples create designs in complementary colors, whereas discordant color conglomerations are often found in industrial slums.

Preference tests, made by an indirect method at Color Research Institute and designed to probe unconscious levels,

suggest that colors normally affect people in accordance with specific laws. Some colors have high preference ratings, others extremely low ones. It was found that some colors rate higher with men than with women and vice versa (men usually preferring deep shades while women like delicate tints), and that some hues get progressively higher or lower preference ratings as they are diluted or neutralized with increasing amounts of white or gray. Color preference can hardly be either a purely subjective or individual matter when there is such correlation between degrees of color preference and degrees of hue modification.

While neutral colors call forth no strong emotional responses in either men or women, primary hues produce clear-cut reactions. Apparently a person either likes a pure hue or he doesn't; there is no gradation of feeling for pure hues as with shades, tints and tones. For example, if he likes pure blue, he will not express a stronger or weaker liking for pure green; green, too, will be either liked or disliked. That same person, however, will have degrees of preference for dark blue, light blue and very light blue, although liking them all.

The preference rating of a color is conditioned not only by its specific tonal value but also by the presence of other colors, by the area it occupies and by the object with which it is associated.

When a color is used with its complementary, the preference rating usually rises. Thus, green has increased appeal when it is used near magenta red, and orange-red becomes more acceptable in the company of green-blue. Presumably this is due to the physical and optical relationship between complementary colors.

However, a warm red which may be pleasing against a neutral background sometimes is found much too vibrant when associated with its complementary green, particularly if the green is not sufficiently diluted or neutralized. The same is true about other complementaries. As mentioned earlier, dilution does not change the complementary relationship.

Dosage, or the quantitative element, is as important in color as it is in everything else. The powerful effect of a hue can be cut down by limiting the area which it covers just as well as by diluting it with white or neutralizing it with gray. For example, a mildly stimulating effect can be created in a room by covering the walls with peach, which is produced by diluting orange-red, or by having orange-red objects or accessories in a room with a neutral background.

Associations, or symbolic elements, strongly affect color preference ratings. For example, magenta red, which has a high general preference rating, drops in rating when it is put into the kitchen. Orange-red, which has one of the lowest general preference ratings, increases in preference when used in the kitchen on walls or in utensils or stool covers. Colors of the peach-pink group receive increased preference ratings when associated with cosmetics but drop in preference when linked with hardware.

A large percentage of people shows preference for a certain green when that color is associated with a vacation. The same green drops in preference when it is used with various food products. Another green has a high rating when associated with food but a low rating when associated with clothing. Still another green has a high rate of acceptance when

seen with jewelry but falls in preference rating when associated with cosmetics.

Rarity is also a factor in color preference. Colors seen only occasionally possess the emotionally stimulating elements of surprise and newness. Common colors, like common foods, are monotonous; they may become tiresome and prompt us to look for new color sensations.

Another fact about color preference is that it does not necessarily coincide with color retention. Yellow, for instance, has a low preference rating but a high retention rating. In other words, although yellow is not well liked it is easily recalled. Peach, on the other hand, while a favorite with most people, is difficult to remember. Some colors, however, have the same ratings for preference and for retention.

Tests conducted at Color Research Institute on the basis of what people want (not what they say they like) reveal also that there are geographic, national, cultural and economic factors in color preference. For example, a specific red received a much higher preference rating with Italians and Mexicans than with Scandinavians and New Englanders. And it had a much higher preference rating with Italians in low-income groups than with upper middle-income Italians. A cool magenta red had a very high general preference rating but a much lower one among the underprivileged. A grass-green color had a low preference rating in rural communities but a very high rating in a steel-mill community. Higher education and higher income coincided with preference for delicate colors. Illiteracy and poverty coincided with preference for brilliant colors.

For practical purposes, research showed that persons who had many emotional outlets and/or ability to purchase emotional satisfaction showed a preference for diluted and neutralized colors. Those who had opportunity for only a limited variety of emotional outlets (either because of lack of education or because of low income) showed a distinct preference for pure hues in large doses, particularly for those that were warm, such as orange-red and orange. For the underprivileged, the nearer the colors were to the rainbow the more enticing they were.

Generally speaking, magenta red and blue are very popular colors, but yellow-green has a low preference rating. Blue-green has much higher preference than yellow-green. Although popular as a pure hue, magenta red becomes generally unacceptable when diluted with white. A pure orange-red has a very low preference rating, but when mixed with white and thus converted into peach, its preference rating is high.

There is reason to believe, on the basis of psychoanalytical studies, that persons who show strongly abnormal color preferences also possess other abnormal characteristics and that abnormal reactions to certain colors can often be traced to unfortunate experiences in formative years.

Women who show a preference for colors normally preferred by men exhibit other masculine characteristics. Men who prefer delicate or "feminine" tints show other effeminate traits. Individuals who shun any suggestion of a pure hue are often found to be overly inhibited persons who fear to express themselves emotionally.

Individuals who have an aversion to red or blue may find

their negative feelings traceable to a painful childhood experience in connection with those colors. However, these people generally are not aware of the connection between their color phobias or obsessions and early traumatic experiences. In a previous book * I give a number of examples of persons with aversions to one or another color due to traumatic experiences associated with those colors.

In conclusion: color is an optical and psychological factor everywhere. Colors affect our emotions at work and at play. Some colors create pleasant moods; others produce discord and irritability. Emotional stability and efficiency depend to a great extent on environment, of which color is a most important element. By learning the nature of color we can harness its power and use it for our emotional well-being, our general welfare and as a means of influencing people.

The Semantics of Color

It is now clear that the true blue and the commonly recognized red are not primaries, either in light or in pigment. On the color chart or on a color wheel blue lies between green-blue (a pigment primary) and violet-blue (a light primary). Red lies between magenta red (a pigment primary) and orange-red (a light primary).

Unfortunately, the promoters of color photography entered the graphic arts field not in the spirit of introducing a new art medium but of competition to art. Because it developed independently from art, color photography created an independent color language, unrelated to that of art. In turn,

* *How to Color-Tune Your House* (New York: The Macmillan Company, 1954).

Emotional Response to Color

Different colors evoke different reactions in viewers. Be aware that some of these reactions will be culturally specific. For example, in the U.S., brides often wear white as a symbol of purity and widows wear black as a symbol of mourning. However, in many Asian cultures, brides wear black. The following is a guide as to the possible meaning of colors.

- Red - danger, stop, negative, excitement, hot
- Dark Blue - stable, calming, trustworthy, mature
- Light Blue - youthful, masculine, cool
- Green - growth, positive, organic, go, comforting
- White - pure, clean, honest
- Black - serious, heavy, death
- Gray - integrity, neutral, cool, mature
- Brown - wholesome, organic, unpretentious
- Yellow - emotional, positive, caution
- Gold - conservative, stable, elegant
- Orange - emotional, positive, organic
- Purple - youthful, contemporary, royal
- Pink - youthful, feminine, warm
- Pastels - youthful, soft, feminine, sensitive
- Metallic - elegant, lasting, wealthy

Main Color page
HyperGraph Table of Contents.
HyperGraph Home page.

Last changed July 28, 1998, G. Scott Owen, owen@siggraph.org

Lucinda Heasman

Color	Appropriate Subject Matter	Mood instilled	Personality Type summoned	Part of self summoned
Red	Emotional subjects: love War and human suffering	Love, anger, hatred, passionate, warmth	Hero (saturated but light reds), Villain (saturated but darker reds)	Id
Pink (light) (dark pink may have the same connotations as red – above)	Material, bodily comfort, Female and children's issues Personal Appearence	Comfortable, safety, femininity, caring	Baby	Id
Yellow	Feelings, personal opinions/attitudes' feelings. Matters to do with the self	Happy (if saturated color), positive, optimistic cheerful	Hero	Ego, Ego-ideal
Purple	Light shade – can be used interchangeably with light pinks (feminine color) Dark, saturated shades – matters of style and taste.	Sophisticated, intelligent, important, regal.	Hero	Ego-ideal
Green	Politics, patriotism, environmental issues, matters not directly involving the self, nature Life and growth, energy	Calming, Stimulating (if saturated) Happy, positive	Hero? Villain?	Id?
Brown	Politics, patriotism, nationalism (color of the earth and the homeland..). Ideals and idealism	Serious, optimistic, patriotic,	Hero? Villain?	Id?
Orange	Similar subject matter to reds and yellows	Bright, cheerful, happy	Hero	Ego
Blue	Cold, rational and sad subjects Discipline Masculine subject matter	Sad, cold (esp light blues), rational, truthful, dutiful, calming	Saint, Tyrant	Super-ego
Black	Rarely used as background color – but if so – evil subject matter; death, power	Sinister, eerie, strange intimidating	Saint, Tyrant	Super-ego
White	Official subject maner, formal subjects	Dull, stark, boring, formal. Mood must be created by the font used if white paper used.	Saint, Tyrant	Super-ego

Renee Duffy
May 3, 2000

Format and Color Psychology

Your survey will likely be targeted at one of the parts of the self that were described in last week's memo, and numerous studies have shown that colors can have a large effect on people's moods. Therefore, it may be useful to look at the following guide when choosing the color of the paper, font, and even graphics for your questionnaire.

Colors of the Id:

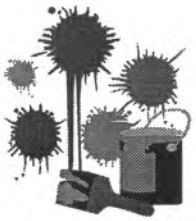
1. Red - symbolizes passion, heat, danger, urgency, and blood
2. Green - stands for energy, faith, health, money, and life
3. Pink - color of babies, innocence, softness, and comfort
4. Blue - means trust, solitude, and loyalty (see also super-ego)

Colors of the Ego-ideal:

1. Yellow - represents caution, jealousy, and cowardice
2. Purple - symbolizes intelligence, sophistication, royalty, and power

Color of the Super-ego:

1. Black - stands for evil, power, strength, death, and rebellion
2. White - means goodness, purity, chastity, and cleanliness
3. Blue - represents truth (see also id)



MY EMOTIONAL RESPONSE TO COLORS

AN EXERCISE IN FREE ASSOCIATION

"Light and color have always played a prominent role in human affairs. . . . Though we occasionally hear people express strong likes and dislikes for certain colors, the impact of color sensations is usually made on the unconscious."
(L. Cheskin, Color Guide for Marketing Media, 1954)

What *feelings* do these colors evoke?

Pastels	Blue-Green
Bright Colors	Light Blue
White	Deep Blue
Pink	Violet
Red	Purple
Yellow	Tan
Orange	Brown
Pale Green	Gray
Dark Green	Black

What *colors* express the feeling of these states?

Love	Strong
Hate	Weak
Affection	Masculine
Anger	Feminine
Calm	Spiritual
Excitement	Sexual
Youthful	Warmth
Old Age	Coldness
Light	Liveliness
Heavy	Death

In his discussions of personality, Ben Wright often illustrates psychological concepts with drawings. In his "Face" handout, he elaborates on the Freudian mind. How would you apply color to the concepts he depicts?

What colors evoke the...

SUPER-EGO (PAST, VIRTUE, THE EAR, THEM) _____

EGO IDEAL (FUTURE, PRIDE, EYE, MYSELF) _____

Ego (Present, Reason, I) _____

Id (It, Body, Baby, Mouth, Me) _____

Saint _____

Tyrant _____

Hero _____

VILLAIN _____

Baby _____

Victim _____

Past _____

Present _____

FUTURE _____

And finally...

WHAT COLOR IS YOUR VARIABLE?

You have developed a questionnaire that is intended to invite information about a variable. What color or colors would help us experience your variable?

_____

Color phores

Ben Wright

Red

red in the face
red rebel
rosy-fingered dawn
in the red
not one red cent
seeing red

Pink

pink slip
pink of perfection
pink eye
in the pink

Orange

orange marmalade
orange line
Orangemen
agent orange
love for three oranges

Yellow

yellow streak
yellow coward
yellow dog
yellow journalism
yellow press
mellow yellow
old yeller

Green

green about the gills
green jacket [golf]
greenhorn
green light
green thumb
green with envy
greenbacks
greenhouse
green berets
lean green fighting machine

Blue

blue funk
blue in the face
blue streak
blue moon
blue movies
blue velvet
blue period
blue ribbon
blue skies
blue stocking
blueblood
feeling blue

Indigo

indigo ink
mood indigo

Purple

purple prose
purple fit
purple passage
royal purple
born to the purple

Violet

shrinking violet

Now, add your own!

35

Font Psychology

Matthew Enos

THE BRIDE WORE WHITE

Danger! Highly Flammable!

What's wrong with this picture?

Of course. The fonts are all wrong. In fact, I purposely reversed them. The Helvetica Black font used in the bride line would have been more appropriate for the danger message and the New Berolina MT font used for danger obviously is meant for something more fanciful. No one would make the mistakes shown in this contrived example, yet how sensitive are most questionnaire designers to the typography of their research instruments?

When we place a questionnaire in a subject's hand, to a great extent the font used creates the first impression. The current stage of human cultural evolution is utterly dependent upon the written word, which means the printed word. Ever in search of physical and intellectual efficiencies, we come to depend on fonts to give us an immediate orientation to the printed material, even before we begin reading it carefully. Corporate advertisers go to great expense to establish logos whose graphics and fonts powerfully evoke thoughts and feelings about their products.

In just the last few years, writers and designers have become increasingly sophisticated about typeface selection. Quality books often include "A Note on the Type," and best-selling authors can exercise control over the fonts used in their books. Observing that "fonts are hot," a recent Chicago Tribune article (August 8, 1999) pointed out that the desktop publishing revolution has put once elitist typeface design in the hands of anyone who uses a computer. All of which suggests that, as a questionnaire designer, you should pay attention to typeface design as well.

Before I studied questionnaire design, my sense of typography came from growing up in a newspaper family and doing some desktop publishing. I was aware of the impact that fonts create, but I had not related font choice to the psychology of human interaction, the *conversation*, that is so important in questionnaire design. It is not just how we hit the subject that counts, but what aspects of the subject's personality we seek to evoke. Font usage is important because it is our first opportunity to establish productive contact with the subject whose experience and ideas we need so badly.

There are several broad classes of typeface use that apply to all fonts. The first is the distinction between serif and sans serif fonts. Serif typefaces have small counterstrokes capping the ends of each character's main strokes. Although the reasons why are still debated, research clearly shows that serif fonts are easier to read over long passages, while sans serif fonts are cleaner and may have more immediate impact. Books typically use serif fonts, while advertisements and posters often employ sans serif fonts. Designers are usually advised not to mix several varieties of either basic style in the same piece, but one serif and one sans serif font may work well together. Newspapers typically use sans serif headlines with serif text.

Another distinction is roman versus italic faces. Originally from the capital letters chiseled into the monuments of ancient Rome, today "roman" indicates "plain" text. Slanted italic text, originally handwritten by calligraphers, can be used to convey emphasis or to make a single word or phrase stand out. Because they convey emphasis, italic letters should be used sparingly. Sometimes writers place whole pages in italics, possibly thinking it looks pretty or classy, but the actual result is text that is harder to read.

A third variable is weight. Most fonts can be rendered in lightface (plain) or boldface and in condensed or expanded versions. Almost all computer fonts are non-proportional (letter width determined by letter shape), but there are a few proportional fonts (each letter the same width). Some specialty fonts are based on one or another of these characteristics.

A Font Sampler

The title of each font, and the descriptive text beneath each title, is displayed in 10-point type in the font described. (A few very small typefaces have been raised to 11 points for readability.) Titles are in boldface, descriptive text in lightface (normal text weight). Font groupings are serif, sans serif, proportional, italic, and novelty or special purpose.

Baskerville Old Face

One of several "old style" typefaces. Conveys a feeling of dignity, history, and even strength of purpose (at least to me). If this look appeals to you, also see Bookman Old Style and Goudy Old Style.

Bookman

Strong, straightforward, friendly. Highly readable, often used for book text. Good choice for short blocks of text. Ideal for headlines and other display applications.

Bookman Old Style

The font above, but cast in an antique, old fashioned look. See Baskerville Old Face (above) for comments on old style typefaces.

Garamond (11 pt)

Highly readable, elegant, graceful, classic — a standard serif face. Might it seem somewhat poetic or dated, even effete, in a questionnaire?

Garamond Narrow (11 pt)

Apple Computer's corporate typeface. I like it, but it does say "Macintosh" to anyone familiar with Apple products. So far, that identification has kept me from using it on a questionnaire. I should try it sometime.

Georgia

A new font that is quite readable, with a certain elegance. Won't convey the same-old same-old feeling of many of the fonts we fall into the habit of using too often.

Lubalin Graph

Square serif, or Egyptian face can be used for text or headlines. Square serif faces, sometimes called grotesque fonts, first appeared in the early 1800s. Originally used as attention-grabbing faces in advertisements, gained popularity as text faces in the early 1930s.

Lucidia Bright

Light, refined. Designed to be legible both on screen and in printed form. Holds up well when faxed (there is a special Lucidia Fax font).

New Century Schoolbook

Highly readable but somewhat stodgy, with a McGuffey's Reader feel. Strong, no-nonsense face. I often use it for handouts directed at students. I used it for the text in this piece.

Palatino

Dignified, elegant, classical, formal. Use for books, magazines, brochures, or to add a touch of class to reports. Widely used in books at one time, although some designers reserve its use for shorter text passages. A personal favorite. Just about right for many purposes.

Times

Not a glamorous face, but highly readable. Created for the London *Times*. Somewhat condensed, good for getting a lot of copy into a small space. Useful in questionnaires to hold items to single lines. Solid, workaday face, but won't stand out in a crowd.

Times New Roman

More modern version of Times. Actually just as condensed as Times, but seems lighter, less stodgy. This is a good example of the typographer's art — improving a font by refining letter proportions and letter fit.

Ariel

Ariel is a sans serif font with a clean, modern look. It is good for headlines or text. I like it for headers and footers on questionnaires, and perhaps for introductions and directions. I used it for titles, headers, and footers in this piece.

Avant Garde

Sans serif face influenced by Bauhaus school of design. Conveys a modern look. Minimalist, geometric letterforms make it the least readable of the laser-printed fonts for long passages of text. Still, a beautiful font.

Comic Sans MS

Recently designed font, part of the desktop publishing revolution. Has a light-hearted, "let's don't take ourselves too seriously" feel. Compared to similar fonts, this one is very readable.

Geneva

Retooled version of original Macintosh bitmapped font. Strong, highly readable. Good when you don't want to risk misreading, as in scripts. America Online uses it as their default font for all e-mail, creating an identification that almost ruins it for me.

Helvetica

Popular sans serif face, probably most widely read typeface in the world. Simple, compact, readable. Good for text, headlines, ads, signs, reports. Short on personality. Neutral. Good choice for headings that accompany a serif face.

Courier

Proportional serif face that mimics the typewriter. Useful when columns must be in line, as in numerical applications. Most widely used font for WINSTEPS computer analysis output.

Courier New

More recent version of Courier. I use it for WINSTEPS output. To my eye, a bit more elegant than Courier. Subtle changes in proportion and fit may soften the typewriter feel of Courier.

Monaco

Proportional sans serif face. Widely used in advertising. Clean, modern. But lacking in style, elegance? Another "city" named Macintosh font that looks odd in laser output.

Nadianne

Modern italic font. Sometimes provides pleasing contrast. Could be used for chapter heads or subheads. Makes for a good mix with a strong serif font like Bookman.

Oxford *(11 pt)*

Italic font with Greek, classical look. Titles, subheads, other brief lines of type. Use with sensitivity. Oh heck, why not have some fun with fonts like this? Try it.

Swing *(11 pt)*

Special purpose font. Suggests modernity, with-it sensibility. Could give elements of a questionnaire a lighter, perhaps more humorous feel.

Zapf Chancery *(11 pt)*

Italic font that suggests calligraphy. I sometimes use it when adding my name to a document, hoping it suggests a written signature.

Matura MT Script Capitals

A special purpose font. The design values are in the capital letters. What do they suggest to you? What kind of questionnaire might benefit from this font?

Old English Text (11 pt)

Suggestive of medieval Biblical or academic text. Often used on diplomas and certificates. Could add feeling of pretentiousness or mock seriousness.

Prestige Elite

Why would any computer user deliberately go for a typewriter appearance? Perhaps to give a questionnaire a dated look? Or to suggest kinky, quirky fun. To think I spent half my working life admiring the strong look of elite type!

STENCIL

SPECIALTY FONT. THERE ARE LITERALLY HUNDREDS OF SUCH SPECIALTY FONTS, MOST OF WHICH STRONGLY SUGGEST SOME SPECIFIC CHARACTER.

COPPERPLATE GOTHIC LIGHT

THIS INTERESTING FONT IS ESSENTIALLY A "SMALL CAPS" TYPEFACE, WHERE ALL THE LETTERS LOOK LIKE CAPITALS. IT HAS A CLEAN, MODERN LOOK, IS EASY TO READ, AND CALLS ATTENTION TO ITSELF.

Special thanks to my brother, Timothy Enos, for sharing his expertise in typography and design.

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Word Processing for Questionnaire Design

Matthew Enos

Getting Started

Why limit yourself by using your computer as a typewriter when it can do so much more? You can design an exciting questionnaire in your imagination, so why not learn how to incorporate all that sizzle into the one you produce on your computer? Ultimately, you may design your questionnaires with a page layout program like QuarkXpress or Adobe PageMaker. In the meantime, a few basic word processing skills can get you started on the road to truly elegant and compelling questionnaire design. The following instructions and examples are based on MS Word for the Macintosh, but the PC version of Word is almost exactly the same and other word processing programs are also very similar.

A Bad Example

What word processing deficiencies take away from the professionalism of this excerpt from a questionnaire on abortion? How many defects can you spot?

7. Women have the right to total control of their bodies, including abortion Strongly Agree Agree Disagree Strongly Disagree
8. When a woman becomes pregnant, she has a commitment to carry the child until it is born Strongly Agree Agree Disagree Strongly Disagree
9. Although it is legal, it is immoral for doctors to perform abortions Strongly Agree Agree Disagree Strongly Disagree
10. A pregnant woman who does not want to marry the child's father is justified in having an abortion Strongly Agree Agree Disagree Strongly Disagree
11. Doctors who perform abortions are murderers Strongly Agree Agree Disagree Strongly Disagree

Tabs

Most people control placement of elements of their questionnaires by just hitting the space bar again and again until the cursor is where they want to enter text. For shame! *Always use tabs!* You can tell at a glance whether the questionnaire designer knows how to use tabs by checking how items 9 and 10 look. Do the decimals line up, or is the 10 indented farther than the 9? Check items 9 and 10 on *your* questionnaire.

1. Learn the four types of Tab Stops (called "tabs" from here on). They are *left alignment, center alignment, right alignment,* and *decimal alignment.* Choose tabs by clicking in the upper left corner on the Ruler.

2. Select (highlight) the material into which you wish to insert the tab. Click on the tab icon to rotate to the one you want. Then click on the ruler to insert that tab. Note that when you hold down on the tab, a vertical line runs down the page and shows you where it will affect the text. This can help you position the tab.

3. In a numbered list, place the decimal tab at the two-eighths mark. Then place a left tab at three-eighths. Now move the lower triangle and square over to the three-eighths mark. This will cause subsequent lines of type to line up with the first line (as in this paragraph) and not run under the number.

4. To use this formatting, hit the tab key, type the number of the item, hit the tab key again, and begin typing the entry. No space bars are used.

5. If you know how to use Styles, assign a style to the formatting (I named this paragraph style "1 List"). Once a style is assigned to a paragraph or item, you can change it in one place and automatically update every instance of that style in your document.

Tables

You really become a "power user" when you learn how to format with Tables. Once you get the hang of it, you will use tables for almost all your text layout work.

1. Make a rough drawing of a table that could accommodate the elements of your questionnaire. Suppose you have 20 numbered items with 4 response categories each. You would need a table with 6 columns and 20 rows (does not include column headers).

2. From the *Table* menu (or from the floating Toolbar you should learn to use), choose *Insert Table...*. Specify a 6 x 20 table.

3. Now adjust the columns to fit your questionnaire. Select the entire table. One by one, grab the vertical lines and drag them so the columns look like what you need. You can fine-tune their placement later.

4. Select (highlight) the first column (item numbers). On the ruler, place a decimal tab near the middle of the column. Now any number you enter will line up on the decimal (or on the right edge of the numbers if you don't wish to use decimals).

5. Select the second (item text) column. Choose left align. Because all the text stays within the cell, long items will wrap and keep the same left margin.

6. Select the four response category columns. Choose centered.

7. When Word placed the table in your document, it gave the table one-half point borders that will print. If you don't want the borders to print, choose *Format Borders and Shading...* and select None. The borders are now visible [to you] but non-printing containers for your material. If you want the borders to print, select the entire table and in the *Format Borders and Shading...* dialog box change them to one-quarter point. The finer line looks better to me.

8. Now you will notice that your questionnaire items look too crammed together. You need more air around the items (printers call this "leading"). There are two ways to achieve what you want. Use both methods. Each cell can be top aligned, centered, or bottom aligned. Choose centered. Then the paragraph inside each cell can be adjusted by going to

the *Format Paragraph...* dialog box and adjusting Spacing both Before and After. Try 6 points each. See how your items now appear to be double-spaced? Adjust spacing to suit.

9. You can further manipulate your design by adjusting margins in *Format Document...*, changing font sizes in *Format Font...*, and changing Line spacing in *Format Paragraph...*.

10. Questionnaire designers often think their design "won't fit" on the page. The truth is that it probably will, by varying font sizes, leading, margins, headers and footers, etc. [By the way, look how nicely items 9 and 10 line up here!]

The Bad Example Made Better

Notice how the application of our word processing skills has improved the questionnaire on abortion. Dashed borders have been added here to approximate what you see on screen when you are working on a table with *non-printing* borders. Because of the space necessity for double lines in the Strongly Agree and Strongly Disagree categories, *top* alignment has been chosen for all cells.

7.	Women have the right to total control of their bodies, including abortion	Strongly Agree	Agree	Disagree	Strongly Disagree
8.	When a woman becomes pregnant, she has a commitment to carry the child until it is born	Strongly Agree	Agree	Disagree	Strongly Disagree
9.	Although it is legal, it is immoral for doctors to perform abortions	Strongly Agree	Agree	Disagree	Strongly Disagree
10.	A pregnant woman who does not want to marry the child's father is justified in having an abortion	Strongly Agree	Agree	Disagree	Strongly Disagree
11.	Doctors who perform abortions are murderers	Strongly Agree	Agree	Disagree	Strongly Disagree

In the following example, one-quarter point *printing* borders are shown.

7.	Women have the right to total control of their bodies, including abortion	Strongly Agree	Agree	Disagree	Strongly Disagree
8.	When a woman becomes pregnant, she has a commitment to carry the child until it is born	Strongly Agree	Agree	Disagree	Strongly Disagree
9.	Although it is legal, it is immoral for doctors to perform abortions	Strongly Agree	Agree	Disagree	Strongly Disagree
10.	A pregnant woman who does not want to marry the child's father is justified in having an abortion	Strongly Agree	Agree	Disagree	Strongly Disagree
11.	Doctors who perform abortions are murderers	Strongly Agree	Agree	Disagree	Strongly Disagree

The final example is built on a table without printing borders. It illustrates another way to help the eye follow the item and response choices without slipping off the line. Every other row has been given a 5% gray fill under Shading in *Format Borders and Shading....* This can be a useful device where it is difficult to read across a long line with no borders to guide the eye. Notice that in this example the response categories have been abbreviated to capital letters. This is a format I like, but one on which opinions differ. Saves space but requires a bit of decoding (which I think respondents quickly get used to).

	Strongly Agree	Agree	Disagree	Strongly Disagree
7. Women have the right to total control of their bodies, including abortion	SA	A	D	SD
8. When a woman becomes pregnant, she has a commitment to carry the child until it is born	SA	A	D	SD
9. Although it is legal, it is immoral for doctors to perform abortions	SA	A	D	SD
10. A pregnant woman who does not want to marry the child's father is justified in having an abortion	SA	A	D	SD
11. Doctors who perform abortions are murderers	SA	A	D	SD

A Final Word

You can learn more about Tabs, Tables, Styles, and other word processing commands in the Help menu of the program you are using, in the printed manual (if you bought the full-price version) or in a third-party book written to explain the program more fully. I think these third-party books are particularly useful.

MS Word tries to help you with AutoFormatting. Perhaps you can make use of this feature. I don't like it because I always end up fighting the "help" it tries to give me.

All of these help techniques require an investment of time and frustration tolerance. None of this is quite as easy as I tried to make it seem here. But it is worth learning. Start acquiring these skills as you work on the next draft your questionnaire.

The Language of Response[1]

Matthew Enos

Thoughtful researchers know they are not getting the truth through their questionnaires, but rather approximations of the truth, the empirical feedback that is all researchers have in their quest to understand their fellow human beings. They carefully construct questionnaires, choosing design elements that promote a conversation they hope will elicit useful subject attitudes, and write items they rely on to assess the range and depth of their subjects' experience in the area of the topic. Finally, they choose a rating scale of response categories and category labels to explain the gradations of the scale.

What researchers would like to have is a truth serum or mental telepathy by which they could know exactly what is in a respondent's mind when they ask a question. Of course there is nothing like that. The best researchers can do is formulate intelligent and provocative items that will stimulate genuine, full responses. But that is just the beginning. They must also devise a way for subjects to talk back to them. In a questionnaire, that method is the response category.

Enabling Respondents to Speak

Perhaps no single aspect of questionnaire design save writing the items is as important as the construction of the response format. The number, labeling, and arranging of the response categories sets the language by which subjects respond to items. The issue of response categories and category labels is key to the methodology of questionnaire design and analysis. Some of the problems in this area of research are well known, but they are still without definitive answers. The gulf between the importance of the language of response and what we know about it is probably as great as any in research methodology.

Response categories are the language by which subjects speak. Is the language offered to them rich and evocative, or limited and impoverished? Although respondents could deface the questionnaire, or write something in the *pro forma* "comments" space (which they almost never do), the subjects who respond to questionnaires are essentially mute. Response categories and labels are the *only* language available to them. Researchers owe their subjects a good and sufficient language.

THE RIGHT NUMBER OF RESPONSE CATEGORIES

How many categories should be offered? Offering two categories creates a yes/no task, not a rating scale. On the other hand, some rating scales offer nine or ten marks on a line to suggest positions the respondent might take on any question. It is doubtful that many subjects are able to

[1] Excerpted from my doctoral dissertation, "Defining Emotion with Measures of Intensity and Range of Experience," The University of Chicago, August 2001.

hold this many possibilities in mind while making an accurate judgement of their own answer. Study of the phenomenon of short-term (working) memory suggests that six response categories is about the maximum number of possibilities humans can hold in mind at any one time.[2] This suggests that the ideal selection of rating scale choice points would be more than two but not more than six.

The Problem of Middle Categories

A further refinement suggests that the categories used should always be an even number. Uneven numbers of categories create a middle position. Many researchers cite this as an advantage, on the logic that between any extreme positions there must be some middle ground. This neutral position is often labeled "don't know," "no opinion," "undecided," "not applicable," "does not apply," etc. There are two difficulties with this approach.

First, middle positions also function as escape clauses that allow subjects to exit the questionnaire. Any survey imposes a certain workload on respondents. Middle categories allow avoidance of that work. There may be a biological analog to such avoidance. When seen in the context of a human body, the middle category takes on the function of elimination, with unwanted waste material running right out of the questionnaire. Middle categories also seem to draw responses away from more distant categories.

Second, there is a question of the honesty of middle categories. The social injunction against discussion of religion or politics in polite situations does not claim that people do not have opinions, but that there are situations in which it is proper to fall silent about them. A questionnaire, on the other hand, wants just the opposite. Its success is predicated upon eliciting attitude, belief, and opinion to the fullest extent possible. So it is hypocritical to offer an opportunity to claim neutrality on topics where most people do have quite definite opinions. On most items where people choose "no opinion," in fact they do have opinions. The category simply allows people to avoid the work, pain, or challenge of choosing it. Freud once said, "No one can keep a secret." If a respondent, forced to choose, says, "I have no idea why I am picking this one," Freud might interpret the statement as meaning, 'I know why I picked this answer, but I do not wish to admit my reasons into conscious awareness.'

Too few and too many categories. It is common to see surveys with very few response categories. Often three categories are offered. This not only invites the problem of middle categories, but may be allowing only two real chances to register an opinion on what may be a complex subject. If a survey item presents the proposition "I am a good person," would the responses "rarely," "sometimes," and "frequently" be sufficient to measure a thoughtful person's self-evaluation on this complex dimension?

On the other hand, occasionally one sees a questionnaire with nine, ten, or even more categories to chose from. That could be feasible for specific event or number surveys ("Number of books I read per year"), although even here the better strategy would be fewer but more meaningful categories. In such cases, apparently the researcher hopes to elicit very fine

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[2] A recent *New York Times* account of research in merchandising suggests that "In [the] Weird Math of Choice, 6 Choices Can Beat 600." Investigators found that "providing too many options — particularly when the differences between them are small — can make people feel overwhelmed and overloaded, and as a result, less likely to buy or pursue any of the options available."

distinctions, but it is unlikely that respondents can assess their own experience with such a degree of precision. In addition, the use of so many categories creates an unrealistic workload for respondents.

Are Six Categories Better Than Four?

The most common strategy is to use four categories. This typical strategy is clear and clean, and often yields usable results. There is evidence, however, that a six-category strategy might be even better, at least in some cases.

Four categories. This strategy, neither too few nor too many, is the most commonly used approach to rating scales. If all middle categories were outlawed, four categories would be the overwhelmingly favorite strategy. Not only is it the most common, it is workable for many purposes. The simplest and most often used category labels for attitude and opinion surveys are "strongly disagree," "disagree," "agree," and "strongly agree." If there is a basic human tendency to make immediate judgements of "like it" or "don't like it," the continuum of agreement introduces refinements of our basic, almost reflexive response to attitudes, ideas, and situations.[3] Most people find four categories easy and comfortable to use. But six categories could be a stronger strategy.

Six-category advantages. With six categories, responses are spread toward the ends of the scale. Pilot studies of my Experience of Emotion Scale showed increased responding at the first and second positions and at the fifth and sixth positions when six categories were used as compared to four categories. Professor Benjamin D. Wright has called the extreme positions of the six-category rating scale "bookends." These bookends appear to encourage greater use of penultimate choices. Their very existence frees respondents to choose what now become positions two and five, no longer "extreme" choices. At the same time, bookends provide greater sensitivity to extreme positions. When respondents choose these extremes, their minority choices stand out.

Although extreme positions may defy logic, they can better capture the fullness of human variability. In my emotion study, at least according to the view of emotion on which the investigation was based, the choices "never" and "always" are illogical. Whatever the natural range of human emotion experience, every emotion must be operating at least some of the time. Logically, "never" and "always" do not fit the human experience for any of the potential emotion reactions. Yet those two extreme choices have other advantages.

One useful result of the extreme choices is to allow a kind of proportional representation of minority views. In the final version of the emotion study, 25 percent chose "always" for "love." What does this mean? Romantic love? That seems unlikely, given the low percentage of choices of "lust." More likely it represents a strong religious and philosophical stance, a determination to

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[3] An inventive solution to the problem of representing gradations of agreement and disagreement was offered by a questionnaire design student who placed "Agree" and "Disagree" in large type at either end of the scale, then repeated them in smaller type in the middle. Fellow students who took his survey reported that there seemed to be an easy and natural flow from full agreement to lesser agreement then to lesser *disagreement* and finally to *full disagreement*. This solution used the natural tendency to see differences in a dimension.

"love one another" and work towards building God's Kingdom on earth. If so, the availability of extreme choices allowed voice to this powerful minority opinion.

Extreme choices can also allow individuals to make strong statements about their particular predicaments or sufferings. In the emotion study, five percent chose "always" for "shyness." The people who made that choice can't literally mean "always." They must have moments of calm and contentment, even if only during solitary moments at home, lost in a drama on television. But choosing "always" allows them to say to the world, "My condition of shyness is so painful and so oppressive to me that it is as though inescapable." The choice registers the pain, if not the literal truth. At a Catholic college with a history of religious training, many young female respondents chose "always" for "trust." This may seem an odd choice in today's hardened social milieu, but perhaps it was a deliberate attempt to express the values of a better world. In both the instances of shyness and trust there is the suggestion of strong statements being made.

Finally, employing extreme choices allows a certain diagnostic potential to this simple assessment. Some survey forms read like protocols from a clinical testing session. Many respondents chose "never" for feelings like "happiness," "joy," and "contentment" and "always" for affects like "dejection," "despair," "loneliness," and "sadness." When these loaded words elicit "never" and "always" on the same form, the reader can almost feel the suffering of the subject who filled out the survey. Again, one has the feeling that a cry is being uttered. These diagnostically suggestive choices were allowed by the use of extreme, or "bookend," category labels.

Six-category disadvantages. It is true that the use of six categories places a heavy workload on respondents. The distinctions between choices are not always easy to make. In the emotion survey, does one feel pride "sometimes," or is it really "often"? Respondents reported an uncomfortable feeling of guessing. This discomfort is compounded when the category names do not seem distinctly different.

Another disadvantage of more categories can be spoiled data due to an increase in transposition errors as respondents are forced to read across a long line of choices. In the emotion study, the use of gray fill on every other row helped keep the eye travelling on the same line.

CONSTRUCTING GOOD CATEGORY LABELS

Across the several pilot studies in my investigation of emotion, I made many attempts to find the right category labels. An awareness of two endemic, structural language problems emerged from these efforts.

Language weaknesses. The first problem derives from difficulties and weaknesses inherent in the language. One wishes for robust choices that stand out from each other as the respondent considers them. In a six-category scale with "never" at one end and "always" at the other, at least those two category labels are clear and distinct. But what of the ones in between? The emotion study placed "rarely" next to "never" and "very often" next to "always." Rarely seemed good, but should "almost always" be used instead of "very often?" That phrase was tried at first, but it has the disadvantage of requiring use of the word "always" twice, as well as an awkward placement of the abbreviation "AA" before "A" on the response line, with the possible misinterpretation that AA is stronger than A.

The most difficult problems occur at choice points three and four. The problem is that the words typically used at these points are synonyms for each other. In Figure 1, bullets indicate that the words where columns and rows intersect are synonyms of each other. "Rarely" and "never," for example, which one would like to believe have distinctly different meanings, may not be so far apart in denotation when used as category labels. A thesaurus reveals that many of the words used to signal different points on the rating scale are, in fact, equivalents in everyday language. "Sometimes" and "occasionally" are further weakened by their suggestion of a middle or neutral point, instead of point three (of six) that they were intended to represent. To make matters worse, both terms can hardly be used incorrectly. There are few attitudes or behaviors for which "sometimes" would not be a truthful descriptor. Unfortunately, the language is insufficiently specific to make these categories distinct. Nor are non-verbal strategies any better (they are probably worse).

Figure 1. Synonyms for Typical Category Labels

	Never	Rarely	Seldom	Some-times	Occas-ionally	Often	Fre-quently	Regu-larly	Contin-ually	Always
Never		●	●							
Rarely	●		●	●						
Seldom	●	●			●					
Some-times		●			●					
Occas-ionally			●	●						
Often							●	●		
Fre-quently						●		●	●	
Regu-larly						●	●		●	●
Contin-ually							●	●		●
Always								●	●	

A related but more sophisticated and complicated area of discussion involves the social psychology of language. How questions are worded and the vehicle by which they are presented to subjects may have greater effects than previously thought. Consider the possible effects of limitations inherent in the structure of the language. I suspect, for example, that expressions of positive comprehension may be less refined than gradations of negative comprehension.

In the emotion study I argued that positive emotions are less consequential than negative emotions, and therefore reactions to positive and negative emotions differ in quality. Not only are positive emotions easier to acknowledge, but they do not call for the same degree of accuracy in description as negative emotions. By extension, positive expressions of frequency may not seem to require the exactitude embedded in negative expressions of frequency. In word frequency lists, there are more words available for signaling lesser frequency than for greater frequency. The possibility that negative experiences may be more important than positive presents a gloomy implication for those who resolve the nature-nurture debate by placing their trust in the power of positive experience. Does life insist on imposing the primacy of the negative?

Non-verbal Alternatives

The second language problem is whether subjects are in fact responding to the words that label each category, or instead responding mainly to the visual, geometric position of the label.

Words or positions? The typical research subject has had a long period of "training" in how to complete surveys. Are they reading the actual labels carefully for their language meaning? Or are they just as much (or more?) choosing answers based on their position in the string? This problem calls for further research.

A straightforward strategy for overcoming language problems in category labels is to present a less-to-more line labeled only at each end and ask respondents to choose a point on the line to represent their response. In one version of this strategy, the line contains tick marks placed at equal intervals. Respondents circle the most appropriate tick mark to represent their response. In a more abstract version, the line is left unmarked and respondents draw their own mark on each line. This strategy avoids the problem of imprecision in the language, but brings in a new set of problems. In the view of this researcher, the new problems are worse than the language problems they hope to solve.

Weaknesses of non-verbal strategies. The inescapable problem of the non-verbal line strategy is the difficulty of knowing with any precision what meaning each respondent assigns to each mark circled or drawn in. Choosing or entering a tick mark will constitute a different experience for each subject. Subjects must invent the meaning of each tick mark or position on the line, and the investigator will have difficulty knowing the meaning each respondent assigned to each mark drawn. A very serious problem with choosing or drawing a tick mark is that it invites the respondent to create a middle category and escape the task the investigator intends to impose. Finally, there is a breakdown of precision and meaning when more marks are added.

GUIDELINES FOR CATEGORY CONSTRUCTION AND LABELING

If this study has produced useful findings about categories and category labels, two consequences should be evident. First, the data from the final study should provide evidence of good category usage. Second, it should be possible to write a set of guidelines for category construction and labeling.

An Example

One measure of the success of the categories and category labels chosen is analysis of how respondents used those categories and labels. The data analysis program WINSTEPS offers a table summarizing this use. Category use by 361 subjects in the frequency of emotion study is

shown in Table 1. Comparison of the average and expected measures suggests that use of each scale was consistent and orderly.

In addition, a useful finding emerged from the category use for frequency. Respondents clearly had difficulty endorsing the 50 emotion words. Further analysis revealed that it was the negative emotions that were so difficult to acknowledge. This finding lent support to my hypothesis that there is a tendency to deny and underreport emotion experience. Is this evidence of a kind of emotion muting or "affect phobia" in modern society?

Two points are illustrated by these statistics. First, respondents used the six-category rating scale in a remarkably consistent manner. Note the similarity between the average and expected measures. In general, the rating scale worked very well, suggesting that respondents were able to speak clearly about their experience of emotion.

Second, respondents forcefully proclaimed their distaste for acknowledging negative emotions in their lives. They used the never - rarely - sometimes half of the scale for two-thirds of their choices. When negative emotions were analyzed alone, use of the rejecting end of the scale climbed to an astonishing 89 percent of the total choices. This skew in the use of the rating scale could not be ignored in the interpretation of the reported experience of emotion.

Table 1. Summary of Measured Steps for Emotion Frequency

SUMMARY OF MEASURED STEPS

CATEGORY LABEL	SCORE	OBSERVED COUNT	%	MEASURE AVRGE	MEASURE EXPECT	COHERENCE M->C	COHERENCE C->M	INFIT MNSQ	OUTFIT MNSQ	STEP CALIBRATN	OBS-EXP RESIDUAL	
0	0	1035	6	-22.7	-22.1	100%	1%	1.04	1.02	NONE	-.6%	**Never**
1	1	5058	28	-15.2	-14.2	56%	45%	.95	.96	-49.76	.1%	**Rarely**
2	2	5564	31	-5.2	-6.0	40%	60%	.98	.93	-12.00	.4%	**Sometimes**
3	3	3377	19	3.8	2.4	34%	44%	.85	.81	8.09	-.1%	**Often**
4	4	1800	10	8.9	10.0	30%	12%	1.06	1.07	18.75	-.5%	**Very Often**
5	5	606	3	13.3	16.7	100%	1%	1.21	1.27	34.91	-1.0%	**Always**
MISSING		610	3	-2.7								

AVERAGE MEASURE is mean of measures in category.

Note: Subjects used the rejecting end of the rating scale (never - rarely - sometimes) for 65 percent of their choices and the accepting end (often - very often - always) for only 22 percent.

"Rules"

In summary of the discussion above, the following "rules" might be offered. None is absolute, but there are good arguments for each of them.

1. Do not use middle categories.
2. Therefore, uneven numbers of categories should not be used.
3. Distrust the amount of control exerted by category labels.
4. Be aware of the inherent imprecision of language.
5. Self-testing and pilot testing are essential.

6. Choose the number of categories best suited to your purposes.
7. Two categories are really a yes/no task, not a rating scale.
8. Categories above six rapidly lose precision.
9. Four categories are the most common, but six categories may be stronger.
10. Strive to invest category labels with precise verbal, numerical, or pictorial meaning.

Over the course of the study, I have been impressed by the urgent need for further study of response categories and category labels. As I suggested earlier, perhaps no single element of questionnaire design is more important in guaranteeing the success or failure of a survey. At least one such investigation is underway.[4] The ideas discussed in this new study and the tables of label usage it will offer show promise for providing the guidance that questionnaire designers need.

[4] Thomas O'Neill is preparing a dissertation on categories and category labels. O'Neill gathered survey data on naive subject ratings of the relative strength of typical category labels. From these ratings, he is constructing hierarchies of rating scale labels.

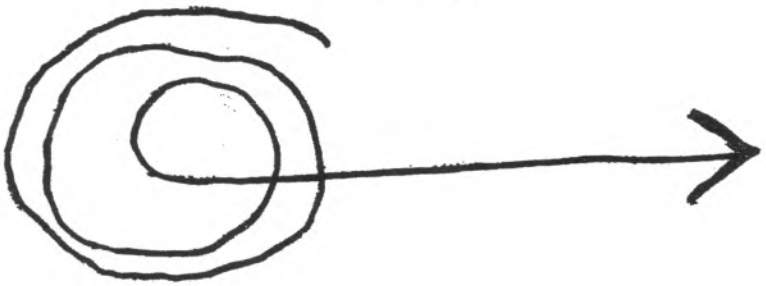
5

The Big Picture

From Questionnaire Design to Measurement Model

SOCIAL *spiral* to SCIENCE *arrow*

Ben Wright



Social Spiral **Science Arrow**

1. DESIGN a Conversation — Initiate an **arrow**

Aim a **construct** at a **respondent**
Spiral into meaning
Fish out **replications**
of a **within respondent** line of inquiry

Define the **arrow**
Focus **questions** into **items**
Craft **response** alternatives
Pilot in person

2. SAMPLE the Conversation — Pursue the **arrow**

Replicate among respondents
Pilot small groups

3. FOCUS Responses — Clarify the **arrow**

Rank alternatives
Eliminate superseded responses
Pivot items

4. BUILD Measures — Document the **arrow**

Confirm **Construct**
Items: map, separation, fit

Illustrate **Application**
Persons: map, separation, fit

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A Primer for Q

Ben Wright

We cannot begin before we establish a clear idea as to what we want to know from whom. We must identify and clarify our intended variables and have succeeded in imagining conversational question progressions (from easy to hard, low to high, weak to strong) which articulate and carry what we are looking for.

FIRST Q's are conversations among speaker/listener roles like:

Deserving, friendly BABY	Pitiful, helpless VICTIM
Exciting, ambitious HERO	Tricky, selfish VILLAIN
Benign, immaculate SAINT	Punitive, blaming TYRANT

The Asker may (or may not) intend a particular role **A.** Whatever their intention, the language of their actual Q's will set a stage, define a speaker and imply a story. With little thought to their role, the Asker can end up playing a role **B** detrimental to their ambitions. The most frequent mistake is when the Asker intends to appear as an uninvolved, above reproach SAINT, but comes across instead as an arrogant, bossy, impersonal TYRANT.

This forces the Answerer into a response role **C** to deal with the Asker's realized role **B** which then fails to connect with or make sense of the Asker's intended role **A**.

But the answer then supplied will seldom come directly from response role **C**. Instead, the Answerer will work out what feels to them to be a safe and useful relationship between whom they hear as **C** and who within themselves they can allow to reply — in the safest, proudest role **D**.

The Asker, thinking they have spoken as **A**, reads the answer spoken by **D** in terms of their own expectations **E** for whom they suppose to be answering **A**, not **B**, not **C**, not **D**. The psycholinguistic imperative is how to follow, clarify, direct, and understand the actual conversation path { **A** → **B** → **C** → **D** → **E** } without losing track of the message and without misunderstanding it.

We must decide what Asker/Answer role paths we want to realize and then find the colors, shapes, fonts, pronouns, nouns, tenses, voices, verbs, and response categories which foster and serve those intentionally chosen role paths.

SECOND Then we build our Q's from simple, singular phrases that can be grasped at one glance, being sure that when a Q takes more than one phrase, the phrases build together naturally into single ideas. And we must sequence the Q's so that they start out easy and interesting, flow smoothly and naturally and provide their own motivation for continuing as they unfold.

THIRD Finally we pilot at length **in person**, first with ourselves, then friends, then strangers.

a. Feel out the flow as we and they speak out loud through the Q.

b. Note pauses, hesitations, drifts, and confusions.

c. Find out why? What interrupts flow? Fix it!

And then, if the Q works this far, we try it on a small group of relevant answerers to evaluate statistically the success of information flow for each variable with a sensitive, variable building psychometric program like WINSTEPS.

Three "Cs" to Meaning: The Big Picture

Ben Wright

CONSTRUCT

1. Intention / hierarchy / dimension / variable
   leading to a **Construct MAP**
2. Realization / articulation / itemization / ITEMS / item
   positioning leading to a **Questionnaire**

CONVERSATION

1. Invitation / motivation / convenience / comfort / security
2. Linguistics / language verification
3. Response format
   post-code / precode
   circle / check / fill

MEDIA FOR CONVERSING

Opinion:	agree / disagree	Value:	good / bad
Attitude:	like / dislike	Behavior:	do / don't
Frequency:	often / seldom	Amount:	a lot / a little
Force:	strongly / weakly	Involvement:	actively / passively

COMPREHENSION

1. Scoring model
2. Measurement model
3. Item analysis, diagnosis, revision —
   leading to a **Construct** (Criterion) **MAP**
4. Person analysis, diagnosis, editing —
   leading to an **Application** (Normative) **MAP**

In a nutshell

Develop a theory/construct

Create a yardstick

Fit the items in your questionnaire to serve your purpose

Instructions should be concise and to the point

At a glance the page should look inviting, interesting and appealing

Make respondents feel important

Pay attention to spacing and location of questions

Use font and color to your advantage

Don't complicate

Say what you mean

Short questions are better than long

Ask only the information you need

Response scale should run on a continuum

One-word response choices are preferred

Assign a meaning to each response choice

Take the questionnaire yourself - do unto others as you would have them do unto you!

Have fun!

CONGRATULATIONS - YOU'RE AN EXPERT!

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Rasch Analysis for Surveys

Ben Wright

Surveys, questionnaires, and interview protocols that use rating scales to collect psychosocial information can be thought of as structured "conversations" between researchers and subjects. To construct a successful questionnaire, the researcher must develop a clear idea of the aim of the questionnaire, especially the inferences that are to be drawn from its use. The researcher must also be intimate with the language the intended subjects understand and use. Observed responses are local descriptions of a situation as perceived by the subject at a moment in time. From these passing responses, the researcher hopes to induce general inferences concerning reproducible processes of enduring psychosocial significance. The desired generalization requires that the observed responses can be fit into an overall metric, a linear variable, along which more-ness and less-ness have well defined quantitative and qualitative meanings. The Rasch Model meets these criteria.

Rasch analysis is a method for constructing from observed counts and categorical responses (like Likert scales) linear systems within which items and subjects can be measured unambiguously. The constructed variables contain the meaning of the structured "conversations." The measure of a subject on each variable summarizes that subject's statements about the variable to the extent that the subject shares a definition of the variable with other correspondents. These measures are the most succinct and reproducible report of the information collected by the questionnaire.

Rasch analysis facilitates the transmission of results to subsequent analyses, but now with the advantage of being linear measures with standard errors of the kind required by most statistical analyses. It also simplifies communication of results to therapists, educators, policy makers and the concerned public, in the form of graphical summaries of client populations and detailed individual client profiles.

A unique asset of Rasch analysis is its ability to detect idiosyncrasies — particular, specific departures of subjects and items from the shared understanding that is emerging from the ongoing research. These local departures have powerful diagnostic implications for the treatment of individual subjects. They also suggest new insights into the nature of the proposed variable and new possibilities for improving its definition and measurement.

[1985]

POLITICAL INVOLVEMENT INDICATORS

How involved in politics would a person have to be to do the following behaviors? Circle your answer.

1.	Wear buttons for candidate	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
2.	Subscribe to news magazines	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
3.	Join neighborhood political group	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
4.	Learn names of national candidates	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
5.	Put bumper stickers on car	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
6.	Volunteer at political party office	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
7.	Watch political news on TV	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
8.	Contribute money to candidate	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
9.	Contribute money to political party	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
10.	Volunteer for an advocacy group	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
11.	Register to vote	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
12.	Join protest march	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
13.	Run for political office	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
14.	Become a poll watcher	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
15.	Vote in primary election	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
16.	Host coffee meeting for candidate	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
17.	Read political brochures	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
18.	Sign petitions	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
19.	Attend political rallies	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved
20.	Circle how involved you are in politics	Not Very Involved	Somewhat Involved	Very Involved	Extremely Involved

Some information about you:

☐ Under 30 years ☐ 31 - 49 ☐ 50 and over

☐ Male ☐ Female

Thank you for taking time to answer this questionnaire.

A Table from the WINSTEPS Data Analysis Program

```
TABLE 1.0 Political Involvement              0004Political.OUT Apr 23 16:38 2000
INPUT: 22 PERSONS, 20 BEHAVS  ANALYZED: 22 PERSONS, 19 BEHAVS, 4 CATS      v2.98
-------------------------------------------------------------------------------

          PERSONS -MAP- BEHAVS
              <more>|<rare>
 100                +  RunForOffice
                    |
                    |
                    |
                    |
                    |
  90                +
                    |  HostMeeting
                    |
                    |  JoinProtest
                    |
                    |  AdvocacyGroup
  80                +  Volunteer
                    |
                    |S
                    |
                    |  MoneyParty
                   T|  PollWatch
  70          x1s   +  Rallies
        F1s   F2n   |  MoneyCandidate
                    |
                    |
                   S|
        F1s   M3n   |  JoinGroup
  60                +
              F1n   |
    M1n   M1n   M3n |
          F1n   M1n |
    F1n   F1s   M3s M|
          F1s   F2s |
  50                +M
    F1s   F1s   F3s |
                    |
              F1s S|  VotePrimary
                   |  BumperStickers
                   |  Brochures
  40               +  WearButtons
                   |
              F1s T|
              M1s  |
                   |
                   |
  30               +
                   |
                   |
                   |
                   |S
                   |
  20               +  Petitions       Register
                   |  MyInvolvement   WatchTVnews
                   |
                   |
                   |  SubscribeMags
                   |
  10               +
                   |  LearnNames
                   |
                   |
                   |
                   |
   0               +
             <less>|<frequ>
```

Questionnaire Design
Suggested Readings

Ben Wright

These readings will enrich your understanding of how to design questionnaires. Other readings will be distributed as class handouts.

Traditional / Technical Readings

Berdie, D. R., & Anderson, J. F. (1974). *Questionnaires: Design and use.* Metuchen, NJ: Scarecrow Press.

Bourque, L. B., & Fielder, E. P. (1995). *How to conduct self-administered and mail surveys.* Thousand Oaks, CA: Sage.

Dillman, D. A. (2000). *Mail and internet surveys.* New York: John Wiley & Sons.

Edwards, J. E., Thomas, M .D., Rosenfeld, P., & Booth-Kewley, S. (1997). *How to conduct organizational surveys: A step-by-step guide.* Thousand Oaks, CA: Sage.

Fink, A. (1995). *The survey kit 2: How to ask survey questions.* Thousand Oaks, CA: Sage.

Fowler, F. J., Jr. (1995). *Improving survey questions: Design and evaluation.* Thousand Oaks, CA: Sage.

Munn, P., & Drever, E. (1990). *Using questionnaires in small-scale research.* Edinburgh, UK: SCRE.

Patten, M. L. (1998). *Questionnaire research: A practical guide.* Los Angeles: Pyrczak.

Payne, S. L. (1951). *The art of asking questions.* Princeton, NJ: Princeton University Press.

Sudman, S., & Bradburn, N. M. (1982). *Asking questions.* San Francisco: Jossey-Bass.

Sudman, S., Bradburn, N. M., & Schwarz, N. (1996). *Thinking about answers: The application of cognitive processes to survey methodology.* San Francisco: Jossey-Bass.

Psychology / Personality Readings

Bouchard, E., & Wright, B. (1977). *Kinesthetic ventures: Informed by the work of F.M. Alexander, Stanislavski, Peirce & Freud.* Chicago: MESA Press.

Erikson, E. H. (1950). *Childhood and society*. New York: Norton.

Freud, S. (1959). Negation. In J. Strachey (Ed. and Trans.), *Collected papers* (Vol. 5, pp. 181-185). New York: Basic Books. (Original work published 1925)

Freud, S. (1961). *The ego and the id* (J. Strachey, Trans.). New York: W. W. Norton. (Original work published 1923)

Wright, B. D., & Yonke, A. M. (1989). *Hero, villain, saint: An adventure in the experience of individuality.* New York: Peter Lang.