How to present scientific results

MSc Programme Epidemiology - Winter 2010/11

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Agenda

1. Intro   why?   motivation
                                    expectations

2. Practical   observe or present/
    exercise   reflect/experience feedback

3. Presentation how?   examples/rules

4. Start a process on developing your style

Scientific presentation - Why?

motivation

expectations

How to present scientific results
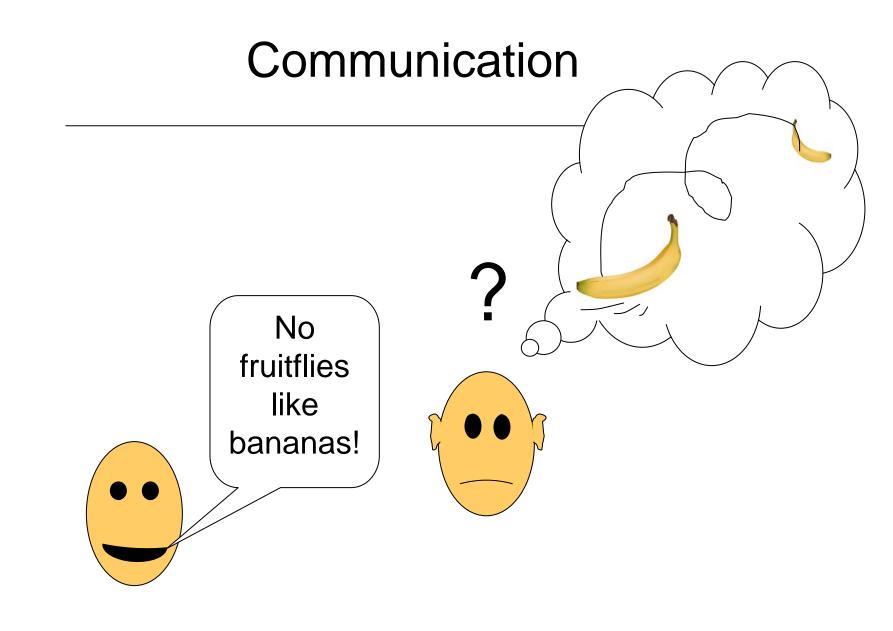
goals, ways and means

Goals

- Why do you present your results?
  - to present your data (results)
  - to discuss your interpretation (diagnoses)
  - to obtain acceptance (positioning)
  - to convince the audience (appeal)

- But be aware, that inevitably you will show
  - your personal engagement and judgements
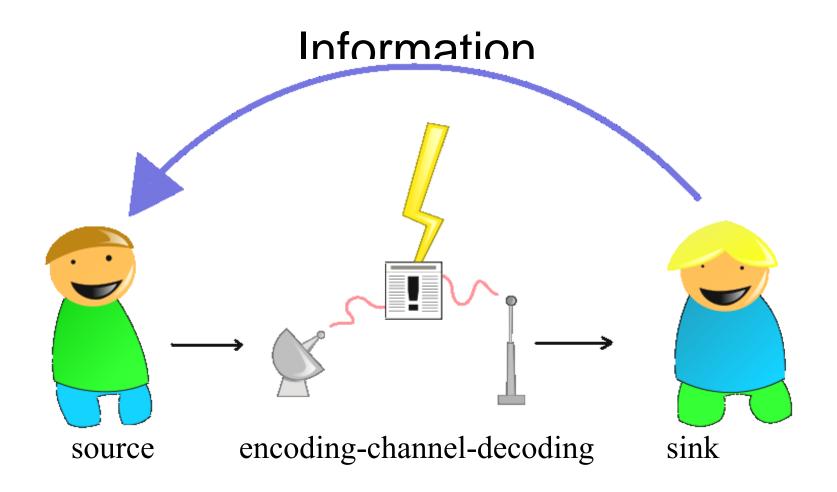 - your appreciation of the audience

Personality Model

We have an inner side of communication between opposing ideas. This inner council needs to come to a balanced vote. If this is not the case, you will communicate divergent messages = Lack of credibility!
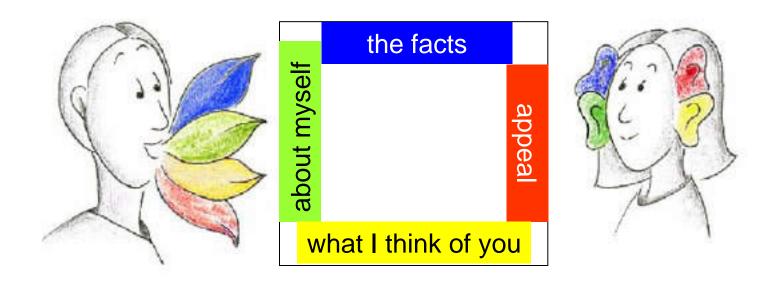
Friedemann Schulz von Thun

Communication

No fruitflies like bananas!

?

Information

source   encoding-channel-decoding   sink

Claude Elwood Shannon
A Mathematical Theory of Communication, 1948
Richard Wesley Hamming
Coding and Information Theory, 1980

„What is the green stuff in my soup?"

Four dimensions of communication

.. as if we are talking with 4 tongues and listening with 4 ears.

Friedemann Schulz von Thun

Implications of the settings on ..

- content
  - singular talk or series
  - prior knowledge of audience
  - when (morning, afternoon, first, after/before ...)
- length of the talk
- partition (intro-methods-results-discussion)
- technical equipment
- appropriate language
- dress code

My data

- Make a proper selection?
  - give sufficient background infos
  - a hypothesis, a model or a question (create suspense)
  - experimental setup and results
  - interpretation with implications (provide solution or perspective)
- How much?
  - length of the talk
  - with/without discussion

Who are the listeners?

- work group
- conference attendees
  (consider grade of specialisation)
- employer, investor
- students
- laymen

Define settings for your presentation

Talk setting	Audience	Purpose
scientific workgroup	well informed, with special and equal knowledge	exchange of data critical input expected
scientific meeting	well informed, with narrow amplitude of knowledge	exchange of data public perception
job application scholarship	different focus, wider amplitude of knowledge	show competence, credibility and personality
teaching	less informed	exchange knowledge, create comprehension, positive role model

My Tools

- How?
  - media

    (powerpoint, flip chart, video, hand-out, objects)
  - choice of format

    (frontal or interactive)
  - posture, mimic, gesticulation, voice
  - timing

Powerpoint slides

real examples

Genotypic Correlates of Protease Inhibitor Resistance

Drug	**Primary Mutations**
APV, FPV	I50V, I84V vs. L10I, M46I, I47V, I54V
ATV	I50L, N88S
IDV, RTV	M46I/L, V82I/A/T/F/S, I84V, L90M
NFV	D30N, L90M
LPV/r	L10I, K20R, L24I, M46I, A71I/L/T/V, V82AT, I84V, L90M, others
SQV	G48V, L90M

Protocol 004: Part II Design

- Key inclusion criteria
  - Susceptible to EFV, TDF, 3TC
  - No prior ART
  - HIV RNA $\geq$ 5000 copies/mL; CD4 $\geq$ 100 cells/mm3
- Hypotheses: Raltegravir (RAL) + TDF/3TC
  - will be generally well tolerated, with similar antiretroviral activity vs efavirenz + TDF/3TC
- Endpoints
  - HIV RNA, CD4 counts, Adverse experiences
  - Exploratory: CNS and lipids
- Timepoints: 24 wk primary, 48 and 96 wk secondary
  - 48 week data presented AIDS 2007
- **Current presentation is 96 week update**
  - **0-48 wks RAL given at doses of 100, 200, 400 or 600 mg b.i.d.**
    - **doses could not be differentiated at 48 wk**
  - **After 48 wk, all RAL groups received 400 mg bid**
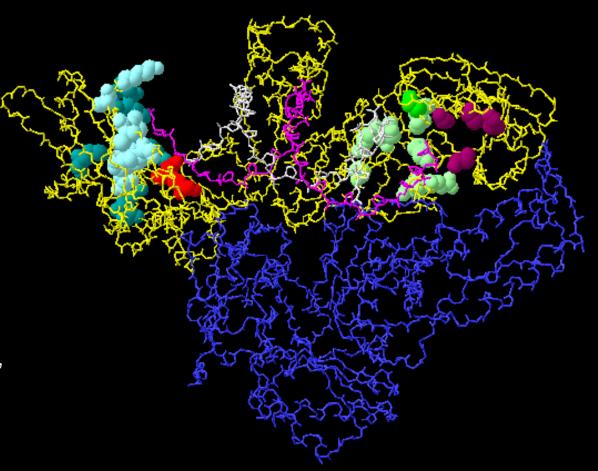 - **Therefore all RAL data post 48 wk shown as single RAL group (N=160)**

Drug resistance mechanisms

NRTI excision

TAMs (Thymidine Analogue Mutations)
M41L, D67N, K70R,
L210W, T215F/Y, K219Q

NRTI discrimination

Mutations Finger Domain
K65R, K70E, L74V,
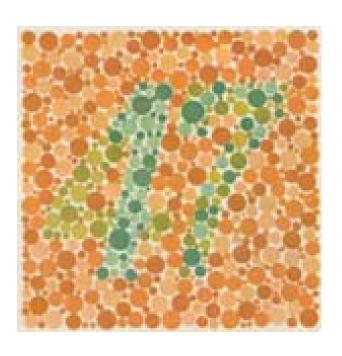Q151M (in complex with A62V,
V75I,F77L, F116Y),
M184V

Colours

Colours

Proposals for Powerpoint

- number of slides   less than 1/min
- fonts, sizes, effects   1, 3, not too much
- background   light or dark?
- lines   <10 (5)
- words in a line   <10 (7)
- layout   if realised, it's too much
- colour   if it encodes a function

Proposals for Flip Chart

- what is it good for?
  - longer lasting infos
  - development of coherence
- make sure you have working pens (2 colours)
- plan the final appearance beforehand
- take care of handwriting

Videos, Handouts, Objects

- Videos
  - to explain dynamic processes
  - be aware of the ‚codec'-problem
- Handouts
  - What is the function of the handout?
  - When will it be distributed?
- Objects
  - How to deal with them?

Personality, commitment, credibility

- posture   upright, with tension
- mimic   appropriate, friendly
- gesticulation   natural
- voice   clear, pronounced
- attitude   decent, self-assure

My Strategy

- SWOT-analysis of my presentation
  (strengths, weaknesses, opportunities, threats)
- anticipated (arranged) questions
- knowledge about surrounding presentations
- course of suspense
  - surprising moments
  - humour
- Closure
  - coming back to the starting question

Tool box – Feed back 1

as a presenter

- – ask for <u>specific</u> feed back

- – try to get feed back repeatedly (regularly)

- – use an audio-recorder, etc.

- – identify positive actions

- – increase your strengths

- – work on weaknesses step-by-step

- – be ambitious, arduous, but patient

Tool box – Feed back 2

as someone who gives feed back

1. invite the presenter to comment on his strenths
2. affirm, if true and add further positive observations
3. ask the presenter for weaknesses, that he realised
4. affirm, if true and make proposals for stepwise improvement

– mark clear personal judgement

   <u>not</u> ‚it is obvious ..' or ‚you should not ..'

   <u>but</u> ‚I had the feeling, that ..'

– be specific

– make suggestions for behavioral changes <u>not</u> for personality traits

Presentation Masterplan

1. In which context
2. Time and Equipment
3. Audience
4. Purpose
5. My Goals

6. My Data
7. My Tools
8. My Strategy
9. My commitment
10. Concentration

Good preparation leads to good performance