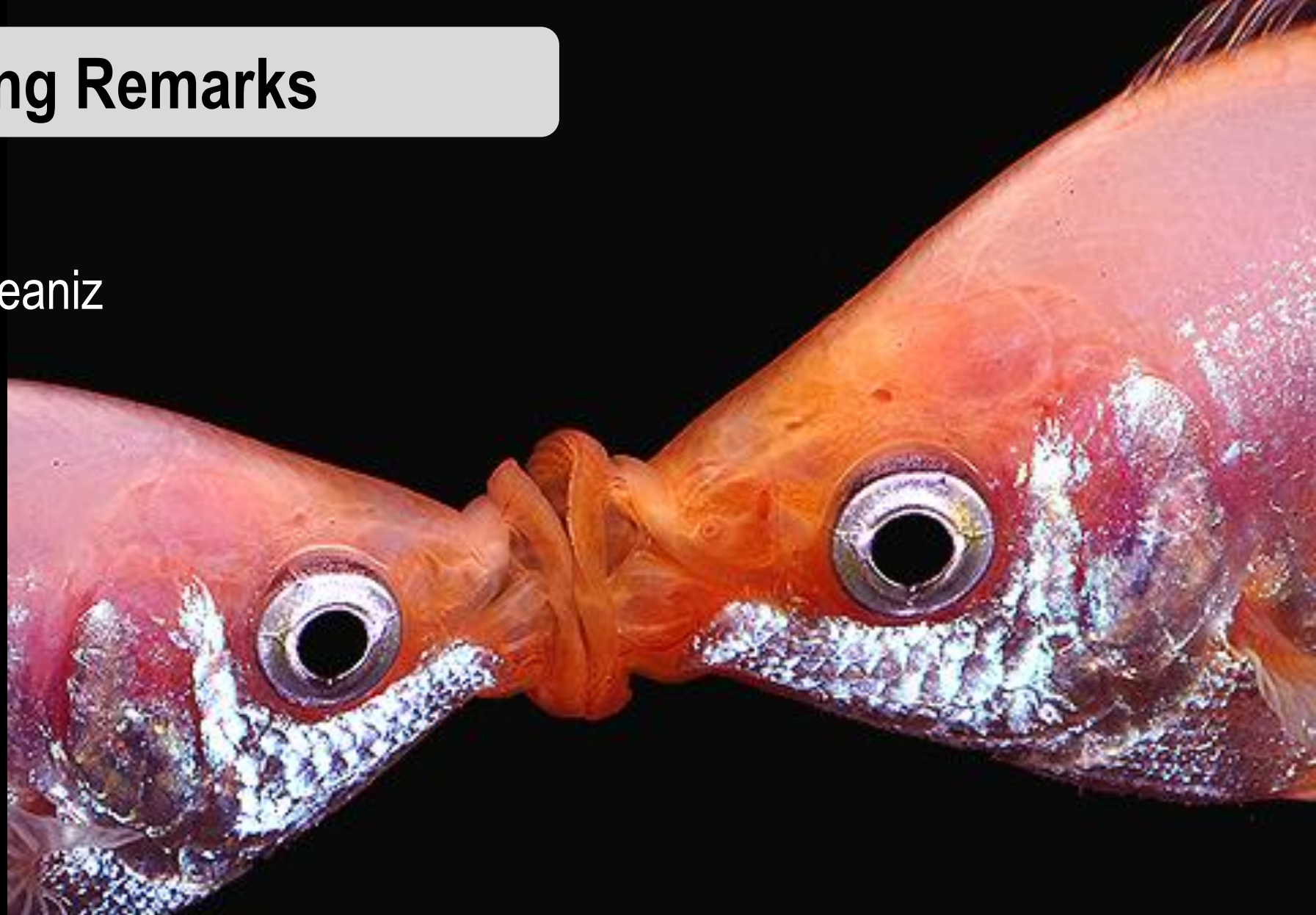


Concluding Remarks

Prof. Carlos Garcia de Leaniz
Swansea University

2nd Symposium on Welfare in Aquaculture
Operational Welfare Indicators for Fish



Fish welfare – the challenges

1

KEYNOTE

10:00 - 10:40

Indicators of welfare
status for cultured fish

Prof. Lluís Tort

UAB, Spain



1. Fish are the most “used” animal, by far (30,000 million/yr)
2. Yet, their welfare needs are the least well known...what is “*normal*”?
3. The *big game changer*: fish feel pain... perhaps a different form of pain, but pain nonetheless (73% consumers think so)

Salmon



2

TALK 1

10:40 - 11:00

OWI for salmon

Dr Lars Helge Stien

IMR, Norway



1. V. challenging to measure welfare in a cage with 000s of individuals
2. Different WIs, for fish farmers it is the *group* that often matters the most....
3. Clear *decision flow-charts* and *3-alert levels* have been developed for salmonids, an example adaptable to many other species...?

Lumpfish



3

TALK 2

11:00 - 11:20

OWI for lumpfish

Carolina
Gutierrez-Rabadan

Swansea University, UK



1. Little known about cleaner fish, recent species to Aquaculture

2. Importance of measuring *reliability* in OWIs *simplification* and *validation*

3. Practical score index (LOWSI) developed and tested: *70% are in good condition*, 2% poor

Tilapia



4

TALK 3

11:30 – 11:50

OWI for tilapia

Dr Sonia
Rey-Planellas

University of Stirling, UK



1. Complex social behaviour & aggression affect welfare (*density* can be an issue)
2. Farmed mostly in developing countries where *welfare needs* may not be a priority
3. Few or no *OWIs* for the second most important farmed fish in the world!

Sea bass & sea bream



5

TALK 4

11:50 - 12:10

OWI for sea bream and
sea bass

**Prof. Michalis
Pavlidis**

*University of Crete,
Greece*



1. Each production stage faces *different challenges*
2. *Temperature* a key issue
3. Big improvements in *humane slaughter*

Using smart sensors - the future

6

TALK 5

12:10 - 12:30

Innovation on OWI using
sensors

Dr Sofia Teixeira

Tyndall National
Institute, Ireland



1. Need for *non-invasive, rapid* tests
2. Smart sensors for Health and Wellbeing (not just *cortisol*)
3. *Wide range* of applications: immune, stress, growth, behaviour....

Thank you!

See you at #SWELA21

Crete

next year

