

## WHAT IS OUR CHALLENGE?

**ORIGINAL**

How could technology help in the psychological rehabilitation of people injured in traffic accidents, in order for them to return to normal, working life?

**REDEFINED**

How can technology **empower** people involved in traffic accidents to overcome the psychological **obstacles** that keep them from working?

## WHAT IS NOT OUR CHALLENGE?

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- \_Traffic accident prevention
- \_Only rehabilitation
- \_Solving physical challenges themselves

- \_Predicting psychological trauma
- \_Overcoming other causes of trauma

- \_Using technology for the sake of technology
- \_Solving every problem a person has
- \_Trying to return people to their life before the accident

# QUESTIONS

01.

PROFESSIONALS

**WHAT IS A TRAFFIC ACCIDENT?  
WHO ARE THE STAKEHOLDERS?**

## CONTEXT

Traffic accident stats

## WORK

Which are the obstacles that prevent getting back to work?

## TECH

Has tech been used before for psycho rehab?

Why & How?

## PSYCHOLOGICAL

How are psychological and physical injuries related?

## REHAB

How does psycho rehab work?

What are the treatment plans that are available?

## LIFE

How are victim's families affected?

## INJURIES

What causes psycho injuries?

Most common injuries

## INVOLVED

What makes a person resilient?

What options do people have?

**Research Map**

**SCIEN  
CE**

**Science behind mental  
trauma**

Doctors

Psychologists

Counselling

Medicines

Technology

Rehabilitation

Organizations

**WH  
O**

**WHA  
T**

**Symptom  
s**

Families

Friends

Patients

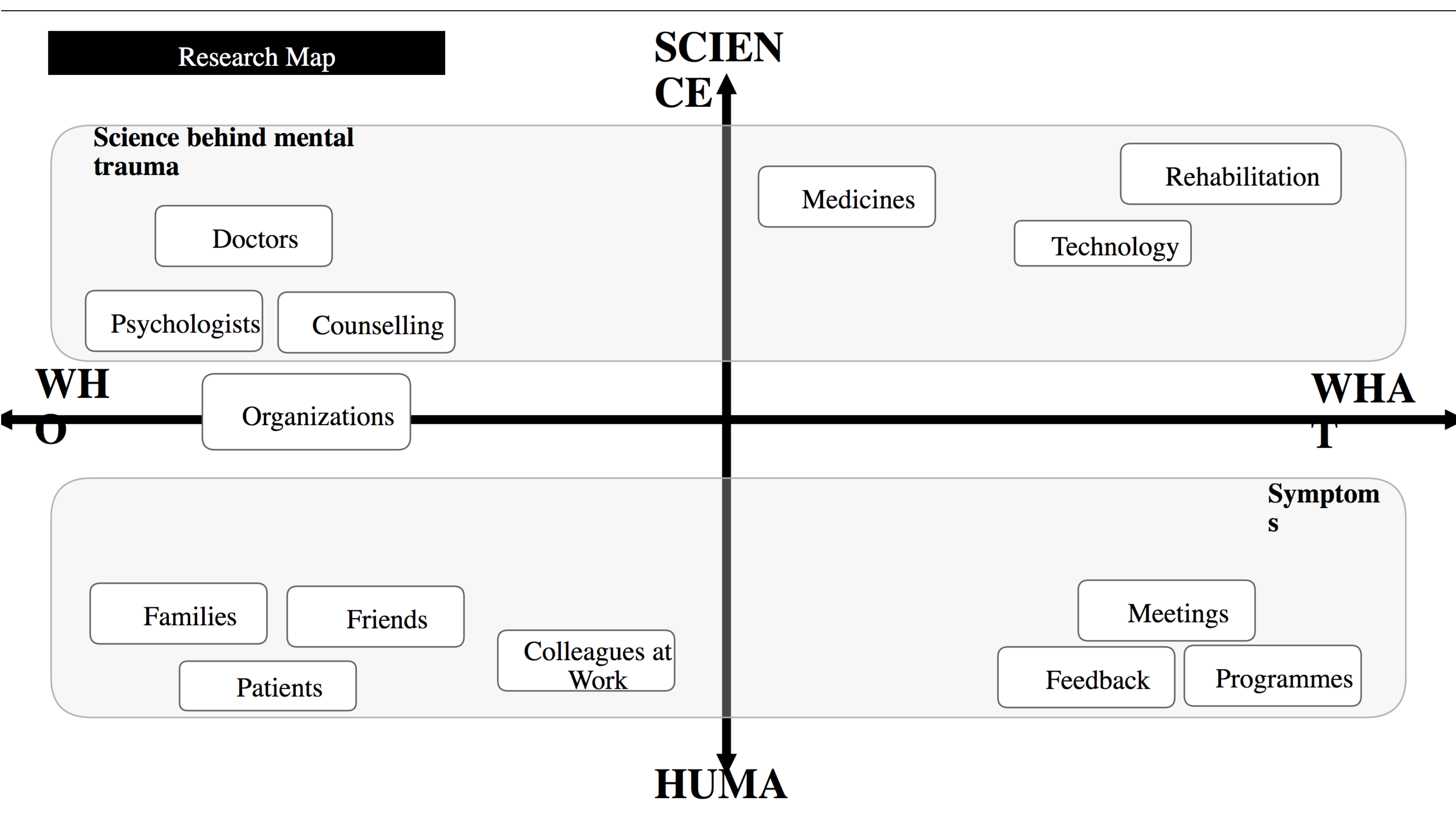
Colleagues at  
Work

Meetings

Feedback

Programmes

**HUMA**



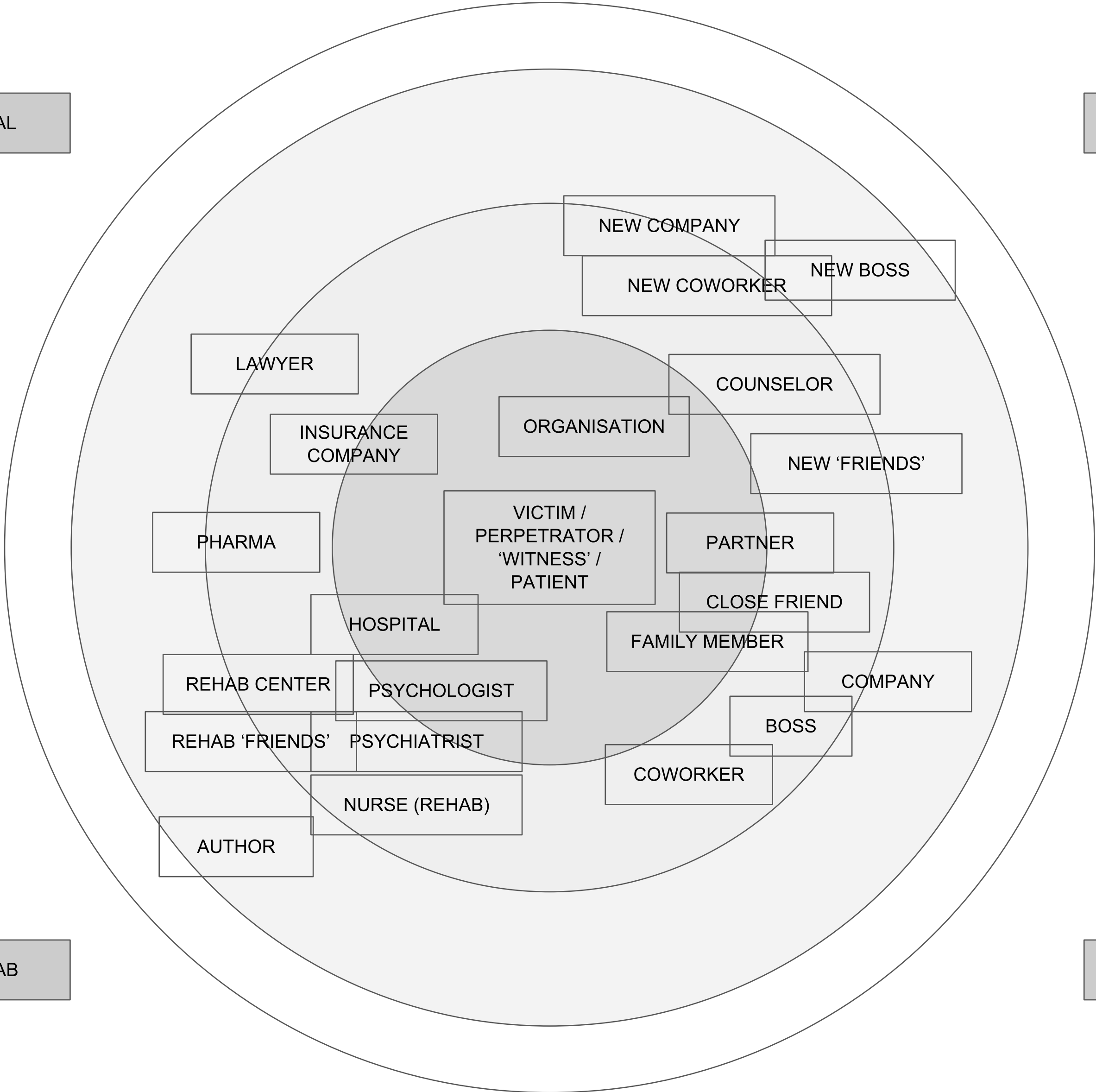
# STAKEHOLDER MAP

V 1.0

VICTIM CENTRIC

LEGAL

NEW LIFE



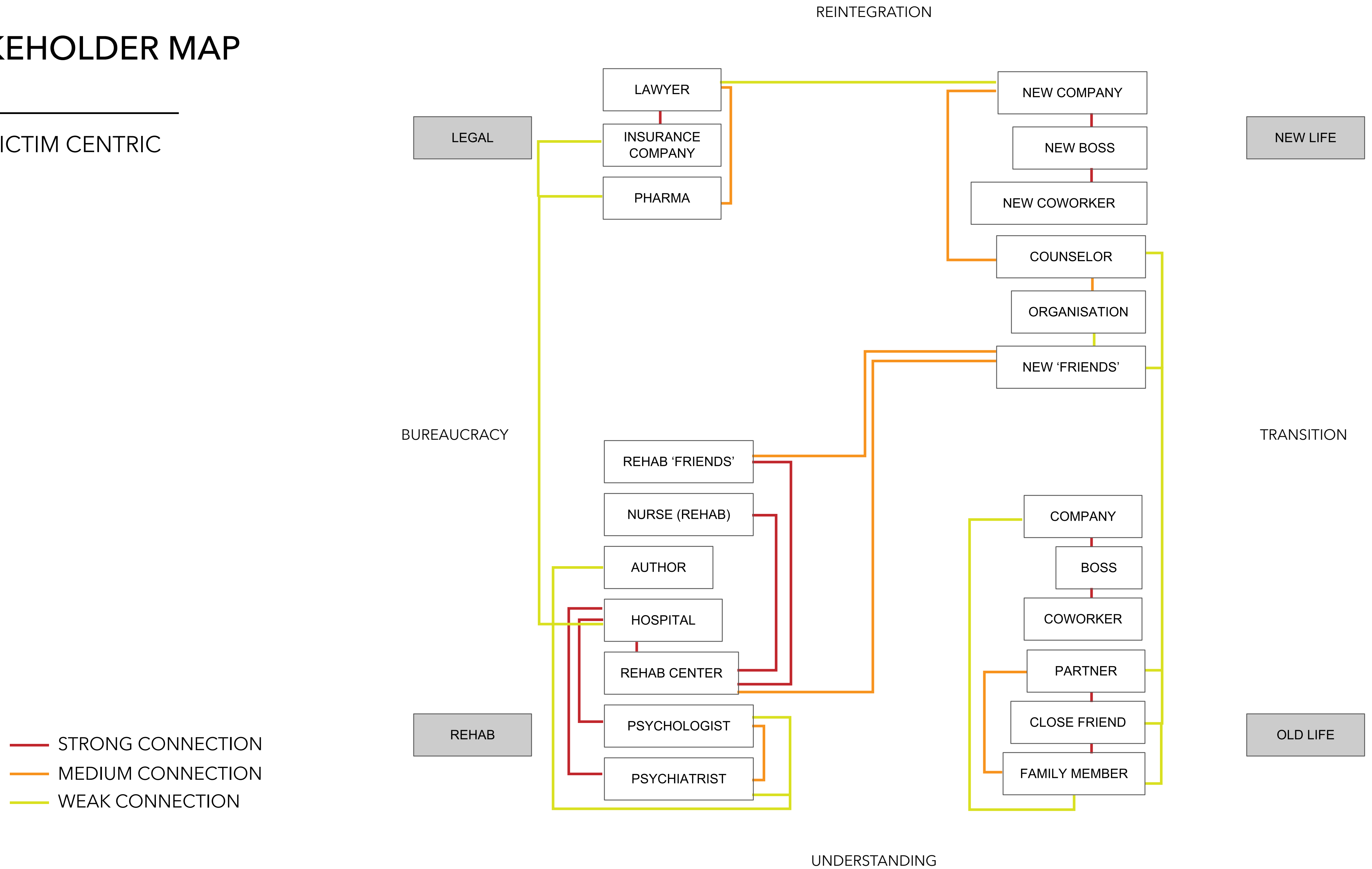
REHAB

OLD LIFE

# STAKEHOLDER MAP

V 2.0

NON-VICTIM CENTRIC



# INTERVIEW SUMMARY

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PROFESSIONALS

**Joao Pequenaço, Media Lab CERN**

He confirmed that there are virtual reality applications, games for rehabilitation

Possible solution:  
rebuilt self-confidence of people

**Romeo Vitelli, Psychologist**

Occupational therapy helps people re-integrate into the workforce.

Recovery is very relative, it completely depends on the patient

**Olga Beltramello, EDUSAFE CERN**

Real Time augmented reality is extremely complex.

Virtual Reality Solution could be beneficial for training LHC maintenance workers

**Sira Abenoza, Professor ESADE**

She is doing complementary research into physical rehabilitation of traffic accident injuries for Abertis  
She is working to facilitate us more contacts.

# ONLINE RESEARCH

01.

## SYMPTOMS

Symptom	Description
Post-Traumatic S Disorder (PTSD)	<ul style="list-style-type: none"><li>• Mental health condition that is triggered by a terrifying event, experiencing it or witnessing it</li><li>• Flashbacks, nightmares, severe anxiety, uncontrollable thoughts about the event</li></ul>
Anxiety Disorders / Acute Stress	<ul style="list-style-type: none"><li>• Group of mental disorder characterized by feelings of anxiety and fear: current events and future events</li><li>• Many come physical symptoms (fast heart-rate / shakiness)</li></ul>
Depression	<ul style="list-style-type: none"><li>• Persistent feelings of sadness and worthlessness</li><li>• Lack of desire to engage in pleasurable activities: can be treated with drugs and therapy</li></ul>
Adjustment / Mood Disorder	<ul style="list-style-type: none"><li>• The symptoms occur because you are having a hard time coping</li><li>• Group of symptoms such as stress, feeling sad, hopeless, and physical symptoms that can occur after you go through a stressful life event</li></ul>
Pain Syndrome (CRPS)	<ul style="list-style-type: none"><li>• Chronic pain conditions affecting one of the limbs usually after injury or trauma. Caused by damage / malfunction of the central nervous systems.</li></ul>
Borderline Personality Disorder (BPD)	<ul style="list-style-type: none"><li>• Serious mental disorder marked by a pattern of ongoing instability in moods, behaviour, self-image and functioning. These experiences often results in impulsive actions and unstable relationships.</li></ul>
Psychosis	<ul style="list-style-type: none"><li>• a severe mental disorder in which thought and emotions are so impaired that contact is lost with external reality.</li></ul>



# CUSTOMER JOURNEY MAP

Single / Family person  
Social Support (yes / no)  
Economical situation  
Driving experience  
Age

Direct accident (passenger / pedestrian)  
Indirect accident (witness / bad news)

PTSD  
Anxiety disorder  
Depression

CONTEXT

TRAFFIC ACCIDENT

PSYCHOLOGICAL DISORDER



RECOVERED?

BACK TO EVERYDAY LIFE

SEEK PROFESSIONAL HELP



NEW LIFE



REHAB

Therapy



Medication

Lifestyle



# SPECIFIC SCENARIOS

01.

XAVI'S CASE

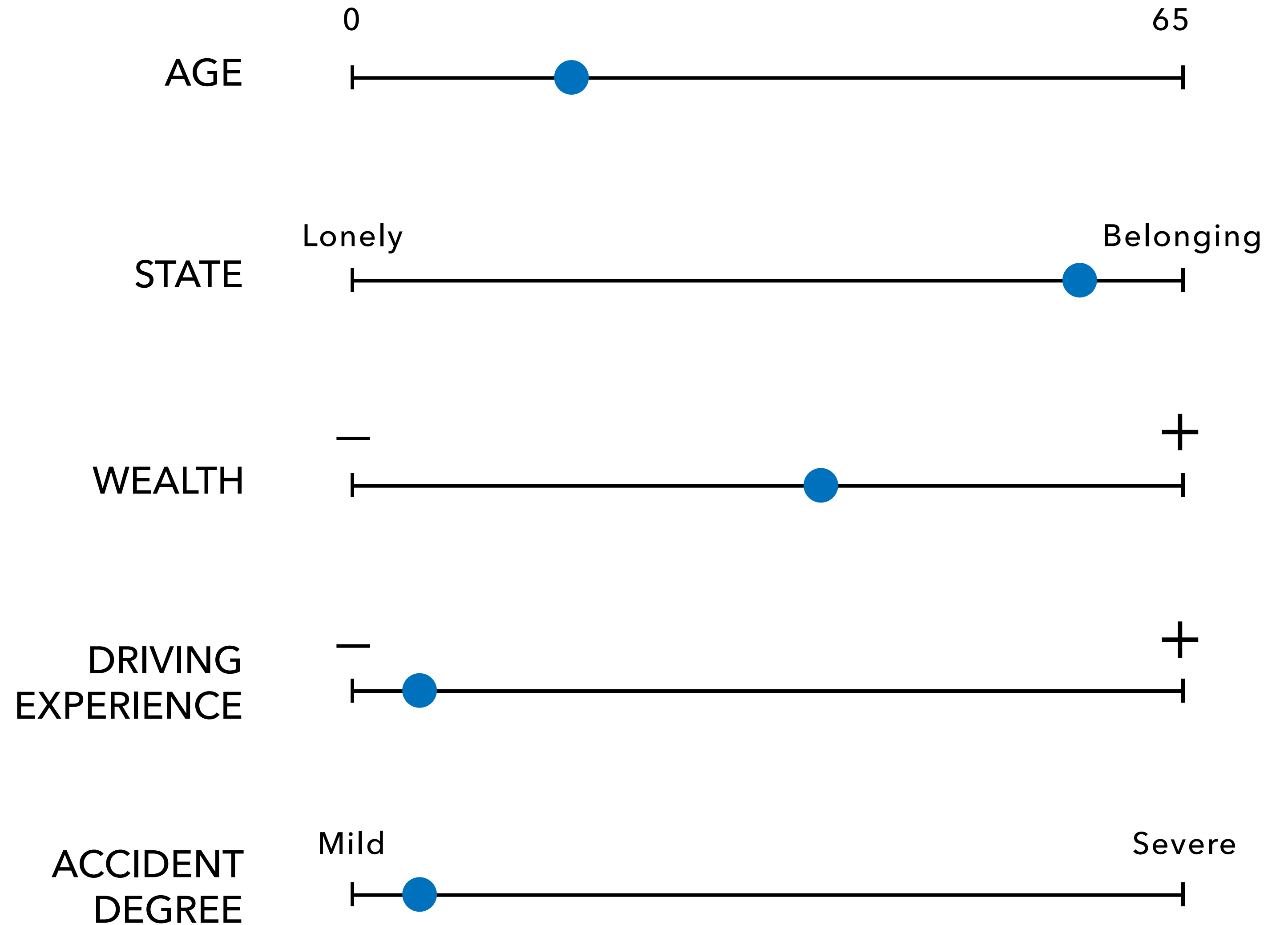
## ACCIDENT

First driving experience.  
Ran over 2 old ladies & broke their legs.  
They did not denounce Xavi.  
Did not seek professional help.  
Only talks about it to his friends.

## TRAUMA

Driving Anxiety.  
Not able to drive a car 5 years after.  
Paralysed when seated in driver's seat.  
Works as a delivery guy on a motorbike.  
Has no problem driving other vehicles.

## CONTEXT



# SPECIFIC SCENARIOS

02.

ERICA'S CASE

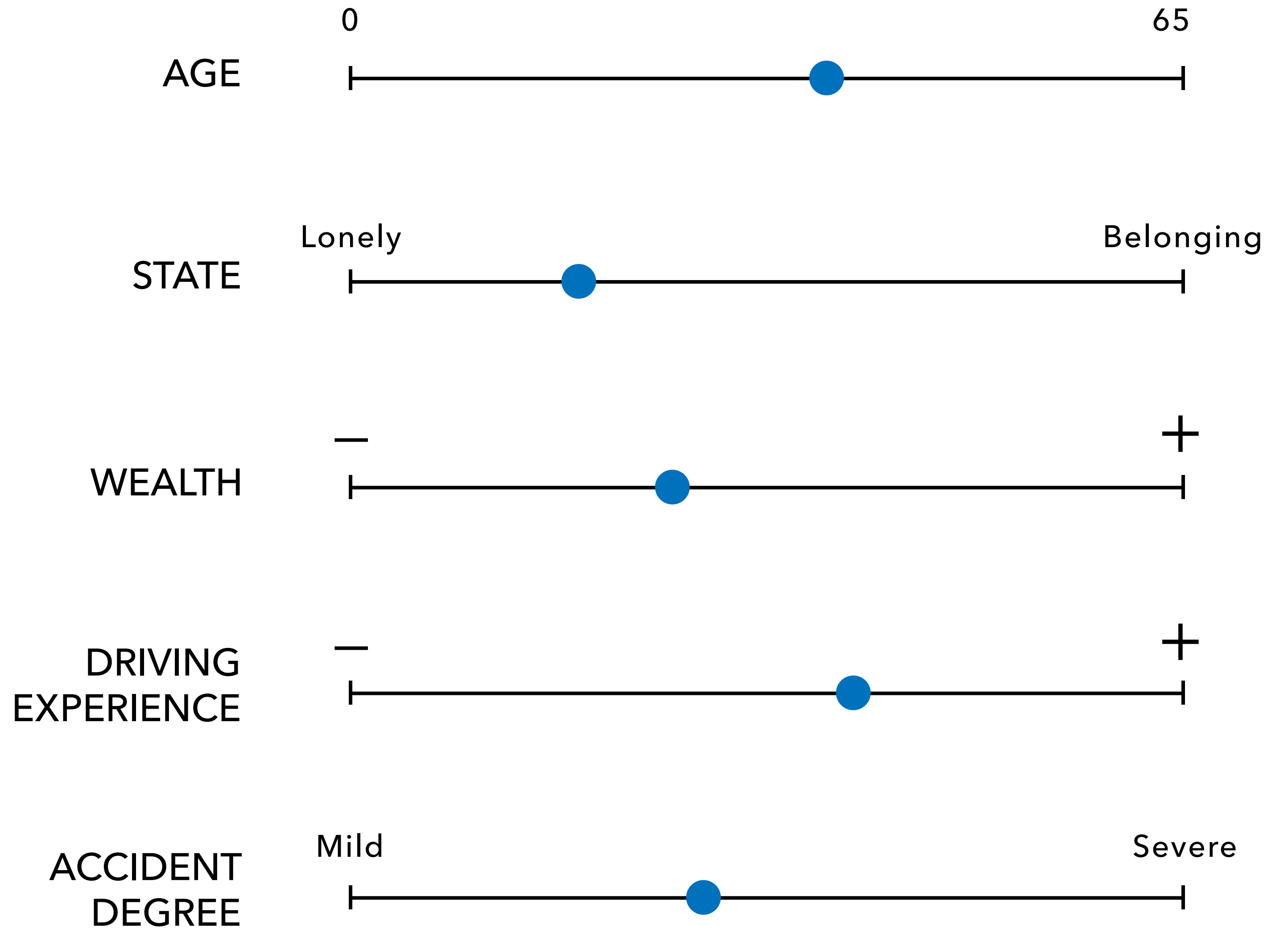
## ACCIDENT

Husband had an accident while driving.  
Their two kids were aboard.  
Sent to the hospital but died shortly after.  
She did not get to the hospital in time.  
Immediately went into shock.

## TRAUMA

PTSD & depression.  
Therapy & medication for 4 years.  
Couldn't see a car & avoided hospitals.  
Constant flashbacks, nauseas & headaches.  
Her mother helped her get through it.

## CONTEXT



# SPECIFIC SCENARIOS

03.

SARAH'S CASE

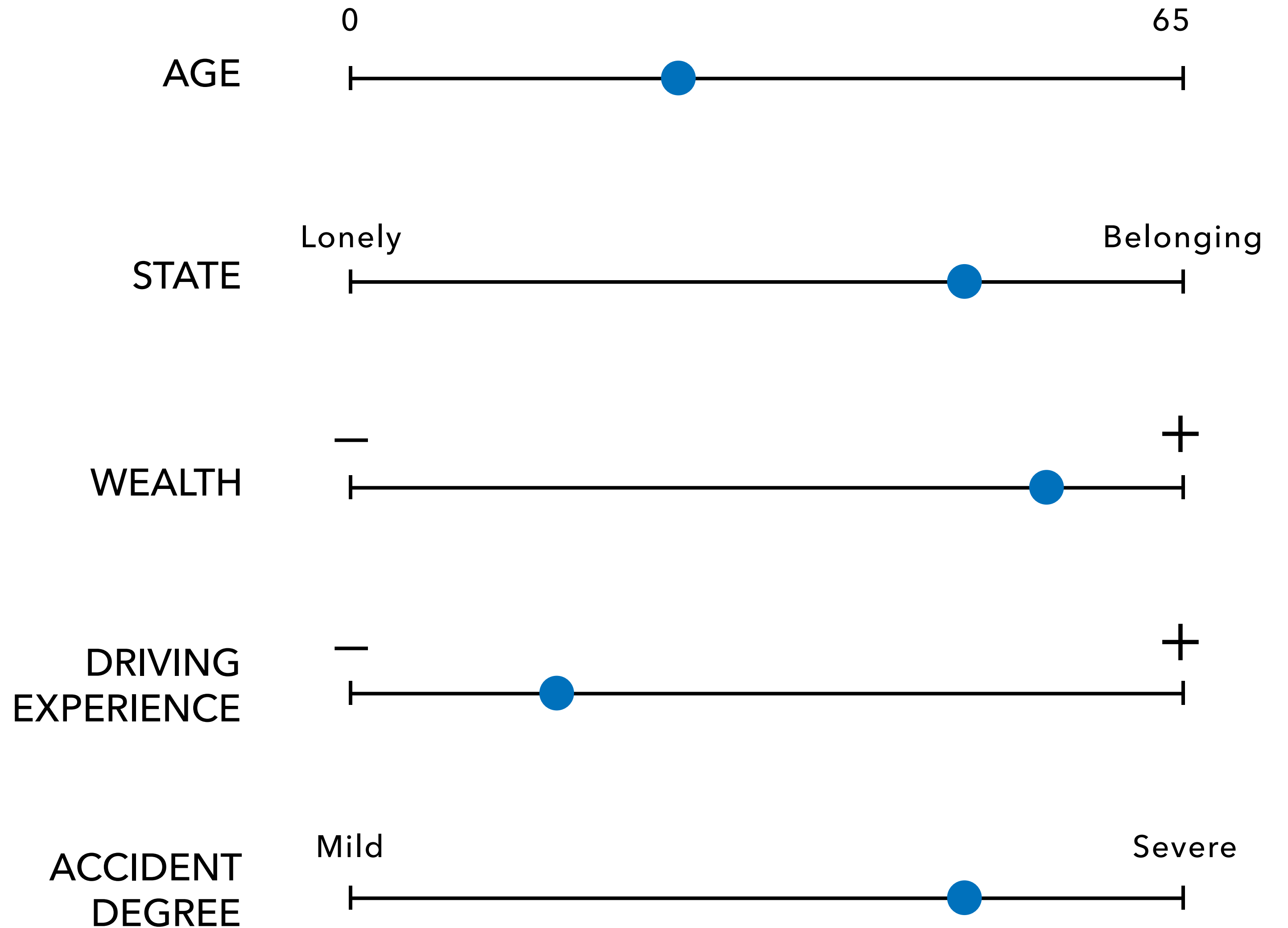
## ACCIDENT

4 months pregnant.  
Witness a traffic accident.  
A mother & her newly born child get violently rolled over by a speeding car.  
Hysteria.

## TRAUMA

PTSD, panic attacks & anxiety disorder.  
Intense therapy & medication for 5 months.  
Rehabilitation program for 2 years.  
Cannot go into the street with her baby.  
Never recovered.

## CONTEXT



# BENCHMARKING

01.

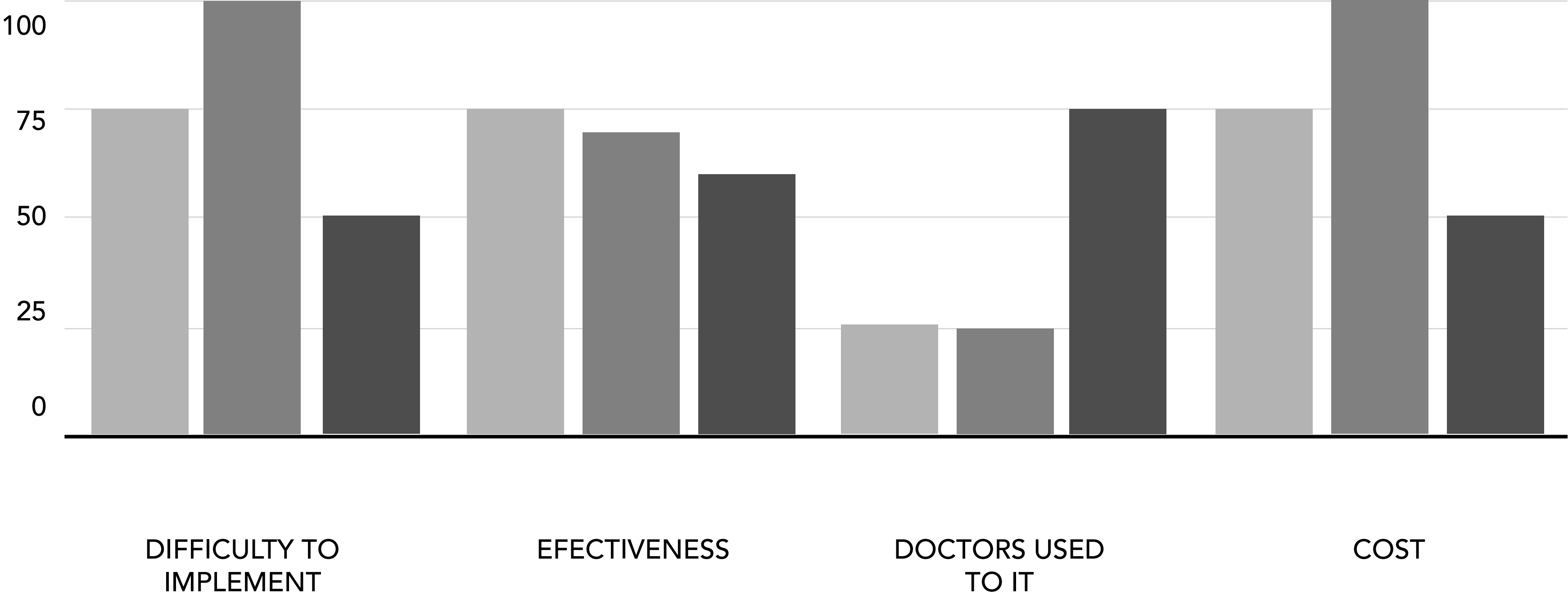
## COMPARISON

	Games	Virtual Reality	Biofeedback
For what injury	PTSD	PTSD, Train Brain to control limbs again, anxiety disorder, phobias treatment, ADHD	PTSD, Panic attacks, anxiety disorders, Depression, Stress, Headaches
Interactivity	Gamification	Significant visual immersion	Exposure Therapy
Benefits	Minimize stigma, maximize engagement, safe environment	Ecological validity	Learn new skills to shift unhealthy patterns (Relaxing)
Location of treatment	Anywhere: Office/ Home	Doctor's office/ Home	Therapist's office
Compatibility with other therapies	Cognitive behavioral therapy	Exposure therapy, cognitive behavioral therapy	All type of therapy
Companies with solutions	Institute for Creative Technologies: Jewel Mine	Mindmaze, Virtual Reality Kinect Rehabilitation, Virtually Better	Nascia, Biofeedback Spain

# BENCHMARKING

02.

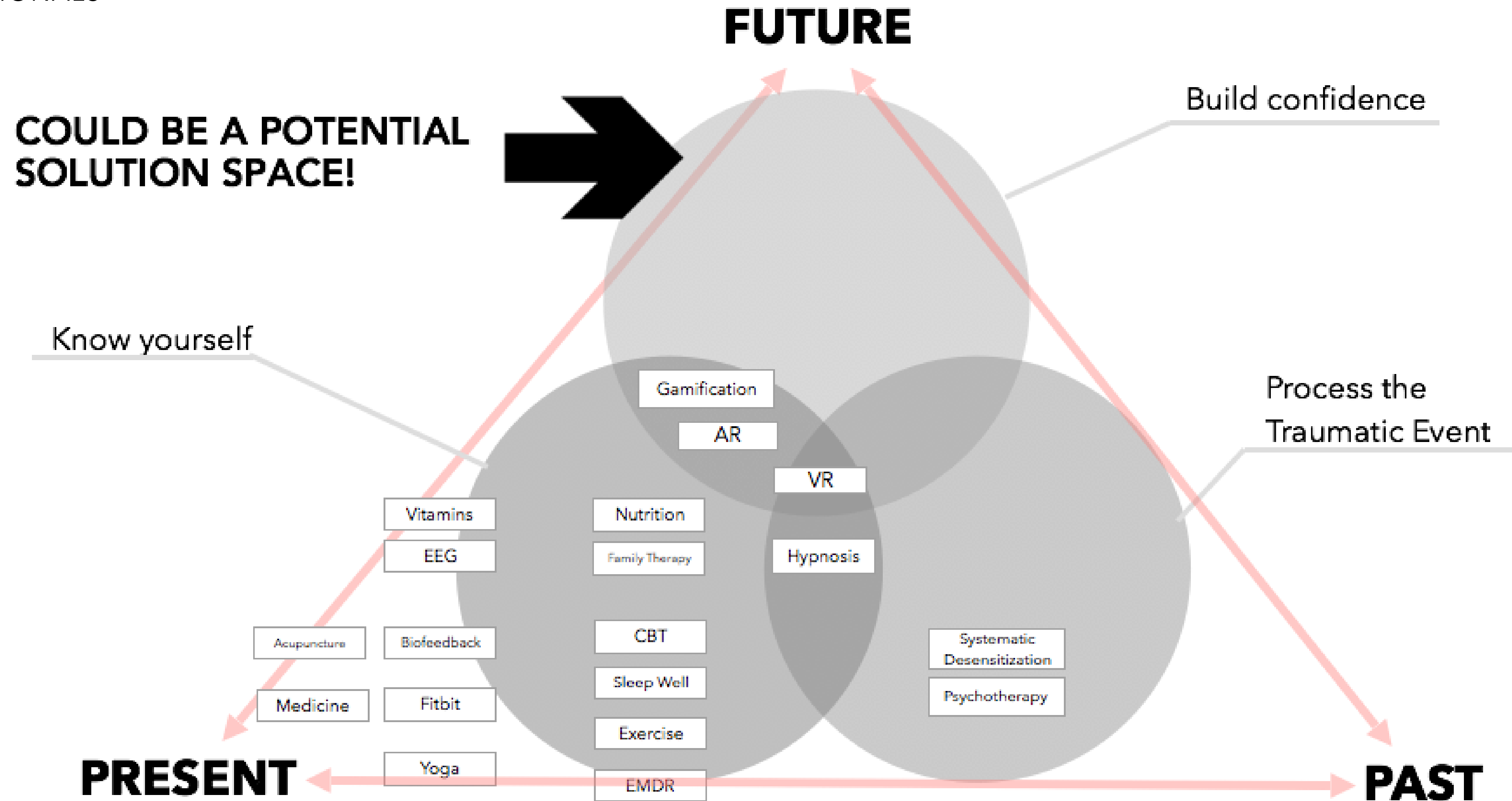
COMPARISON



# HYPOTHESIS

01.

PROFESSIONALS



# HYPOTHESIS

02.

PROFESSIONALS



PSYCHOLOGICAL

### Treatment under supervision

EEG

Systematic  
Desensitization

Psychotherapy

Family Therapy

Hypnosis

CBT

← AT YOUR PACE

→ CONTROLLED PACE

Yoga

Exercise

Fitbit

Sleep Well

Nutrition

**Guidance may be given**

Vitamins

Medicine

**Prescriptions**

↓ PHYSICAL

Shiatsu

EMDR

Acupuncture

Biofeedback

**Treatment under supervision**



# OPEN POINTS

01.

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TARGET USER / NEEDFINDING / TECHNO

## Target & market

Kids, 18-65 year old adults

PTSD, anxiety disorder, depression

Type of traffic accident

## Needfinding

Problems of patients and other stakeholders

Treatment process & available methodologies

Re-process information for more accurate targeting & positioning

## Technology

Depends on the answer to the previous question

# PLANS FOR NEEDFINDING & NEXT STEPS

SON

CERN Week 1	Week of 19.9	Week of 26.9 + Week of 3.10
<u>Administrative</u>	<u>Administrative</u>	<u>Administrative</u>
Transfer work plan to Tuleap	Transfer interview notes to online form	Transfer interview notes to online form
	Continue consolidating research	Continue consolidating research
<u>Deliverables</u>		
Checkpoint Presentation 1	<u>Research</u>	<u>Research</u>
	Deepen understanding of technology	Deepen understanding of technology
	Find stories of patients online	Find stories of patients online
	Identify additional contacts	Identify additional contacts
	<u>Needfinding</u>	<u>Needfinding</u>
	<i>Patients</i>	Appointments with existing/new contacts
	Alan Dicks	Send initial emails to new contacts
	ESADE contact	
	Xavi	<u>Ideation</u>
		Begin solution ideation
	<i>Doctors</i>	
	Douglas Anderson	
	Gwen White	<u>Deliverables</u>
	Sara Guila Fidel Kinori	Expanded contact list
		Interview reports
	<i>Organizations</i>	Updated hypothesis
	AESLEME	Needfinding summary
	FEDACE	Updated personas / customer journey
	Fundacion Lesionado Medular	Preliminary ideation summary
	Hospital El Pilar	
	Guttmann Institute	
	Abertis	
	<u>Deliverables</u>	
	Expanded contact list	
	Interview reports	
	Updated hypothesis	
	Needfinding summary	
	Updated personas / customer journey	

**THANK YOU**

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Team Landau