Ecole doctorale Environnements-Santé
Dossier de projet de thèse « Contrat doctoral Etablissements »
ANNEE 2025

1) Renseignements administratifs sur la direction de thèse[1] (1 page maximum) :

Directeur de thèse HDR :

Nom : **Sulmont - Rossé**

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Section CNU : Biologie des Organismes (n°68)

Grade : Directrice de Recherche

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Unité d'appartenance (intitulé, label, n°, directeur) :

Centre des Sciences du Goût et de l'Alimentation,
UMR CNRS, INRAE, Institut Agro, Université Bourgogne Europe
Directeur : Loïc Briand

Co-directeur de thèse éventuel :

Nom : **Rioux**

Prénom : **Camille**

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Grade : Chargée de Recherche

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UMR CNRS, INRAE, Institut Agro, Université Bourgogne Europe
Directeur : Loïc Briand

2) Descriptif du projet de thèse (devra inclure les rubriques suivantes) :

Nom et label de l'unité de recherche (ainsi que l'équipe interne s'il y a lieu) :

UMR **Centre des Sciences du Goût et de l'Alimentation** (CSGA)
Équipe « Comportement alimentaire : plaisir, santé et durabilité » (MIAM)

[1] ATTENTION : selon l'article 16 de l'arrêté du 25 mai 2016, le total d'encadrants ne peut pas dépasser 2, sauf si l'un des encadrants appartient au monde socio-économique, qui peut venir en sus, ou en cas de co-tutelle; Le décompte des co-encadrements se fera au prorata du nombre d'encadrants : 1 pour 1 encadrant, ½ pour deux encadrants.

Localisation :

INRAE, 17 rue Sully, 21 000 Dijon

Nom du directeur de thèse et du co-directeur s'il y a lieu :

Claire Sulmont-Rossé (Directrice) et Camille Rioux (co-directrice)

Adresse courriel du contact scientifique :

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TITRE DU PROJET: Social learning about food in early life: How infants and young children learn what to eat with the help of others?

Context

Learning what to eat is a crucial and difficult task. Humans are omnivores and need to gather a wide variety of foods to ensure nutritional health and well-being and infants are born into a world replete with objects that have different colors, shapes, odors... A few common taste preferences - such as tendencies to like sweet and salty tastes and dislike sour and bitter tastes - are evident very early in life and likely emerged to guide human learners toward substances that are both safe to eat and nutritious (Schwartz et al., 2009, Ustun et al., 2022). However, these common taste preferences do not account for the great complexity and diversity of human diets. Given the broad possibility space of potential foods and risks (e.g., ingesting harmful entities) across different environments, **infants and young children instead must learn what to eat over the course of development**, going away from eating just milk after weaning. This food learning task is particularly complex given that infants and young children do not only need to learn about the safety and palatability of the different entities in their environment but also about who eats what foods in what context, absorbing social and cultural traditions surrounding food selection, as eating is largely a social phenomenon. Given the complexity of the food learning task, it is simply neither possible nor risk-free for infants and young children to construct a diverse and nutritious diet using trial-and-error individual learning. In fact, research investigating food learning processes in early life highlights that **food knowledge is largely acquired via social learning from more knowledgeable individuals**, including observation, imitation and teaching, (e.g., Addessi et al., 2005; DeJesus et al., 2018). Notably, this work shows that observing what others eat is a particularly influential social cue (e.g., seeing an adult or an older peer eating an unfamiliar food increases children's willingness to taste that food, Addessi et al., 2005).

Objectives of the PhD project

A caveat in the line of work investigating social learning about food is that most of the studies have been conducted with children from 3 to 4 years of age and research with infants and toddlers remains particularly sparse. Yet, it is in the first years of life that we transition from exclusive breastfeeding to eating solid foods and introduce various new foods in our diet, making infancy a crucial period for food learning. Indeed, many food habits are acquired in early life and, in addition, have a large influence on dietary patterns later in life (Luque et al., 2018; Nicklaus et al., 2005). In that context, the overarching aim of the PhD project is to investigate in detail how infants and toddlers learn and choose what to eat, with the help of their social partners (e.g., caregivers, peers).

Specifically, we aim to examine:

(i) **What kind of social information they use to learn what to eat**. A handful of studies

have investigated the effects of watching someone else eat a food on infants' and young children's food learning. However, the effects of other forms of food-related social information remain largely uninvestigated. Here we hypothesize that infants and toddlers can use others' emotional expressions, a source of social signal that is ubiquitous in their lives, to guide their food learning as they use others' eating actions.

(ii) **From whom they learn best**. Children tend to trust more the information provided by familiar over unfamiliar people, reliable over unreliable, or nice over mean, however, this line of research has mostly been conducted outside of the food domain and with children from 3- to 4-years of age.

(iii) **Whether social learning about food is selective, i.e., differ from learning processes in other domains** (e.g., learning about objects) as studies that have directly compared social learning across domains are sparse.

Planned schedule

Year 1:

- Systematic literature review
- Preparation and submission of the PhD experimental protocols to an ethical committee
- Study 1: Exploring what kind of social information infants and young children use to learn what to eat:
  - Participants are presented with novel food objects and observe adults reacting with different emotions towards these food objects. Participants' reactions and behaviors are measured.
- Preparation of a systematic literature review manuscript about social food learning in infancy

Year 2:

- Study 2: Exploring whether social learning about food is selective, i.e., differ from learning processes in other domains:
  - Same experimental protocol as in study 1 but with objects other than foods.
- Presentation of the PhD results to international conferences and preparation of a manuscript about studies 1 and 2

Year 3:

- Study 3: Exploring from whom infants and young children learn best about food:
  - Different persons (e.g., familiar and unfamiliar adults) present novel foods to participants. Participants' reactions and behaviors are measured.
- Presentation of the PhD results to international conferences and preparation of a manuscript about study 3
- PhD manuscript preparation

Bibliography

Addessi, E., Galloway, A. T., Visalberghi, E., & Birch, L. L. (2005). Specific social influences on the acceptance of novel foods in 2–5-year-old children. *Appetite*, *45*(3), 264–271.

DeJesus, J. M., Kinzler, K. D., & Shutts, K. (2018). Food Cognition and Nutrition Knowledge. In *Pediatric Food Preferences and Eating Behaviors* (pp. 271–288).

Luque, V., Escribano, J., Closa-Monasterolo, R., Zaragoza-Jordana, M., Ferré, N., Grote, V., Koletzko, B., Totzauer, M., Verduci, E., ReDionigi, A., Gruszfeld, D., Socha, P., Rousseaux, D., Moretti, M., Oddy, W., & Ambrosini, G. L. (2018). Unhealthy Dietary

Patterns Established in Infancy Track to Mid-Childhood: The EU Childhood Obesity Project. *The Journal of nutrition*, *148*(5), 752–759.

Nicklaus, S., Boggio, V., Chabanet, C., & Issanchou, S. (2005). A prospective study of food variety seeking in childhood, adolescence and early adult life. *Appetite*, *44*(3), 289–297.

Schwartz, C., Issanchou, S., & Nicklaus, S. (2009). Developmental changes in the acceptance of the five basic tastes in the first year of life. *The British journal of nutrition*, *102*(9), 1375–1385.

Ustun, B., Reissland, N., Covey, J., Schaal, B., & Blissett, J. (2022). Flavor Sensing in Utero and Emerging Discriminative Behaviors in the Human Fetus. *Psychological science, 33*(10), 1651–1663.

Financement du projet – partie Recherche (montants acquis, type de contrat)

Budget d'installation Jeune Chercheur associé à Camille Rioux – 50 k€

Connaissances et compétences requises

Le / la candidat(e) devra être issu.e d'un Master de Psychologie (cognitive et/ou sociale), Sciences cognitives ou Sciences des aliments.

Le / la candidat(e) devra :

- Avoir des connaissances statistiques et la maîtrise d'un logiciel d'analyses statistiques (R, SPSS, SAS...)
- Avoir un bon niveau d'expression (orale et écrite) en français et en anglais
- Une expérience avec des jeunes enfants serait un plus

Résumé en français et anglais (limité chacun à 1800 caractères)

Comment apprenons-nous à manger et comment se forment nos comportements alimentaires pendent la petite enfance ? Quelques préférences gustatives – comme la tendance à apprécier les goûts sucrés et salés et à rejeter les goûts amers et acides – sont présentes dès la naissance et servent à orienter les jeunes enfants vers des aliments à la fois sûrs à consommer et nutritifs. Cependant, ces quelques préférences ne suffisent pas à expliquer la grande complexité et diversité des régimes alimentaires humains et au cours des premières années de leur vie les jeunes enfants doivent apprendre ce qui se mange dans leur environnement et cet apprentissage est particulièrement complexe. Les travaux de recherche sur l'apprentissage alimentaire montrent que nos connaissances sur les aliments sont en grande partie acquises via l'observation et l'imitation d'individus plus expérimentés. Par exemple, voir un adulte manger un nouvel aliment augmente la volonté des enfants de goûter cet aliment. Cependant la plupart des études ont été menées auprès d'enfants âgés de 3-4 ans et plus, et les recherches portant sur les nourrissons et les jeunes enfants restent particulièrement rares. Or, c'est au cours des premières années de vie qu'a lieu la diversification alimentaire c'est-à-dire l'introduction de nouveaux aliments dans le régime alimentaire et cette période de développement est donc cruciale pour l'apprentissage et la formation des comportements alimentaires. Dans ce contexte, l'objectif principal de ce projet de thèse est d'examiner comment les nourrissons et les jeunes enfants apprennent à manger avec l'aide de leurs partenaires sociaux (par ex. les parents, les pairs). Plus précisément, en se basant sur des approches robustes issues de la psychologie cognitive et développementales nous examinerons (i) le type d'informations sociales utilisées par les jeunes enfants pour apprendre ce qui se mange, (ii) de qui ils apprennent le mieux et (iii) si

l'apprentissage alimentaire est sélectif, c'est-à-dire s'il diffère des processus d'apprentissage dans d'autres domaines (par exemple, l'apprentissage des objets).

Learning what to eat is a crucial and difficult task. A few common taste preferences - such as tendencies to like sweet and salty tastes and dislike sour and bitter tastes - are evident at birth and likely emerged to guide human learners toward substances that are both safe to eat and nutritious. However, these common taste preferences do not account for the great complexity and diversity of human diets and infants and young children instead must learn what to eat over the course of development. Research investigating food learning processes highlights that food knowledge is largely acquired via social learning from more knowledgeable individuals, including observation, imitation and teaching. Notably, this work shows that observing what other individuals eat is a particularly influential social cue (e.g., seeing an adult eating an unfamiliar food increases children's willingness to taste that food). However most of the studies investigating food learning processes have been conducted with children from 3 to 4 years of age and research with infants and toddlers remains particularly sparse. Yet, it is in the first years of life that we transition from exclusive breastfeeding to eating solid foods and introduce various new foods in our diet, making infancy a crucial period for food learning. In that context, the overarching aim of the PhD project is to investigate in detail how infants and toddlers learn and choose what to eat, with the help of their social partners. Specifically, we'll aim to examine (i) what kind of social information they use to learn what to eat, (ii) from whom they learn best and (iii) whether social learning about food is selective, i.e., differ from learning processes in other domains (e.g., learning about objects). The strength of the project is in the combination of robust methods from cognitive and developmental psychology to conduct an innovative investigation of how humans learn and choose what to eat.

Préciser le domaine de compétence dans la liste ci-dessous (2 choix possibles maximum – ne pas modifier les intitulés : ils sont imposés par certains sites web) **:**

Psychologie, neurosciences

Mots clés :

Aliment (Food) ; Apprentissage (Learning) ; Apprentissage social (Social Learning) ; Apprentissage alimentaire (Food learning) ; Nourrisson (Infant) ; Jeune enfant (Toddler) ; Comportement alimentaire (Food behavior) ; Psychologie du développement (Developmental Psychology)