

"The Frame-Up" Podcast Script

S1E4 - Why Can't We Have Hot Water?

March 18, 2026



Progress Report: 7476 of 7500 total words! [99.68%]

Before we get going, I must apologize for the delay in getting this episode posted, but I assure you it will be worth the wait... Also, there is curse word or two in Act III that are not censored...

Welcome to the Frame-Up podcast... Where the usual suspects in construction cases are given an entertaining if not vigorous defense... Here's your host, Blair Calhoun...

Alright, Alright, Alright... I'm Blair Calhoun, and this is the fourth episode of the first season of The Frame-up Podcast...

This is the culmination of four years of contemplating, conjuring, concocting, and every other con in the dictionary to use storytelling to improve the way builders, engineers, designers, and owners bring buildings, facilities, and structures into existence... To be clear, we're sharing stories NOT training tips... Training courses are great resources to improve your understanding of a subject or ability to master a task... But here's the thing: what motivates a person to improve in the first place?

We're going to present stories in a format or motif that we hope entertains as well as spurs folks to rethink how they imagine, construct, and use buildings and their myriad systems... The Frame-Up's philosophy is best described by the late film legend, Orson Welles, who said "I can think of nothing an audience won't understand. The only problem is to interest them; once they are interested, they understand anything in the world..."

You're probably familiar with the informal term "frame-up" which is shorthand (does anybody out there know how to write shorthand) for a scheme to make an innocent person appear guilty of a crime! We're going to present real stories where the crimes perpetrated or thwarted were against effective, safe, and/or efficient design, construction, or use of buildings... We're inhabiting the stylistic approach of film noir (more on that to come) but with a couple of twists... The first act of each episode is a story that has nothing to do with construction or crime for that matter... Why? Just listen... I guarantee it will be interesting... Think of each episode's second act as "jury" preparation... Why? When you hear the case in Act 3, you'll be serving as *de facto* jury members... We want you to be better prepared to understand the thinking of the usual suspects in the case before you render a verdict!

Oh, who can forget 50 years ago when Maxine Nightingale exhorted us to "get right back to where we started from..." Yes, nostalgia is oh so powerful!

Intro – 560 words

Bceuse of the phaonmneal pweor of the hman mind, msot plepoe do. Aoccdrnig to rscheearch at Cmabrigde Uinervtisy, it dseno't mtaetr what oedr the ltteres are in. The only iproamtnt thing is that the frsit and last ltteer be in the rghit pclae. The rset can be a taotl mses and you can still raed it whotuit a pboerlm. This is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the word as a wlohe. Takl abuot cool.

In several English-speaking countries in the 1980's and 90's, there was a movement among educators to improve the teaching of the language... This movement was dubbed the "whole language" approach which asserted that we learn to read "naturally" from "whole word to part" through exposure to lots of text, memorization of whole words or onsets and rhymes (*e.g.*, c-ake and b-ake), as well as the use of context clues.... The "phonicators" believe that we learn to read "part to whole word" by learning and applying the alphabetic code to decipher the English sound-spelling system..." There is a debunked "test" of the whole language approach that is a viral meme... The test is a paragraph of scrambled words that the majority of expert readers of English have little trouble in reading... And as the passage asserts the reason is "the phenomenal power of the human mind"... Well, not so fast!

A few years ago, I was flying back to our home in the San Francisco Bay Area... As the plane began descending, I put away my latest non-fiction head-scratcher of a book and opened up the latest edition of United's "Hemispheres"... As I thumbed through the pages, an ad caught my eye for a few obvious reasons and one less than obvious... First, ads with comely women are the oldest, most boorish method for getting the

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attention of folks, regardless of their gender or orientation.... Second, the women were depicted as athletes, yet one was only wearing the sport bra being advertised... Third, the ad mentioned superstar, Taylor Swift, having some connection to the product! As I glanced at the advert's copy, I was struck by the obvious typo and immediately began wondering how did this "failure" come to be? (Recall, Amy Edmundson's three "kinds of failure" from Episode 1!)...

The ad's copy read "rehearing" instead of "rehearsing"... An automated spell checker would not have flagged the error and the difference between the correct and incorrect words is a single letter, a missing "s"! I showed the ad to several people... None recognized the error on their first pass... I asked one person to read the copy, and without prompting, she read it aloud and correctly/incorrectly said "rehearsing" without hesitation... I quickly highlighted that the word as written is actually "rehearing", and she was mildly chagrined at the revelation...

So, what's going on here? The late Daniel Kahneman, a world-renowned psychologist, won the 2002 Nobel-prize for Economics NOT Medicine "...for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making" in situations of uncertainty... In his best-selling book, "Thinking Fast and Slow" first published in 2011, Kahneman expands the concept of our "two modes of thinking" that have fascinated psychologists for over a half-century... Kahneman borrows the terms "System 1" and "System 2" to describe these modes: "System 1 operates automatically and quickly, with little or no effort and no sense of voluntary control..." while "System 2 allocates attention to effortful mental activities that demand it, including complex computations..." Effortlessly reading the passage of misspelled words is clearly System 1 at work... The same can be said for overlooking the misplaced word in the advertisement...



You'll be hearing more from Mr. Kahneman on our Systems 1 and 2 later in the podcast... After the break, we'll return with Act One: Why can't we have hot water?

Act One: Why can't we have hot water? – 1,075 words



During our weekend morning constitutional along the bluffs of Half Moon Bay, my wife of 33 years, Avis, was recounting her week as a 5th Grade teacher at one of our local public schools... This morning, she was lamenting how little time teachers have for "bio breaks." Unlike their colleagues at Middle and High Schools, Elementary School teachers must keep a group of 25 to 30 kids engaged, on task, entertained, safe, and more without breaks from their classrooms other than recess and lunch periods... I'm generally empathetic to her working conditions and know I'm not being asked to find solutions... I admit, on occasion, I do give a suggestion or two on how to look at a situation from a different perspective... As she concluded this particular rant, she asked "... and to top it all off, when we do get a bathroom break there's no hot water! Why can't there be hot water in the bathroom?" This is a rhetorical question that she has asked several times over the years... Though I'm a

degreed Chemical Engineer, a licensed Mechanical Engineer, and an unlicensed plumber and electrician, I've not offered any opinion or advice on this subject... But this time, I decide maybe the time is right for looking for a solution... I ask "Hon... I know the school's buildings are over 40 years old, but there's no reason that a hot water line would just stop working..." She replied, "I don't recall there ever being hot water (she's been teaching at this school for over 11 years!)... "OK... Next time you're in the bathroom, just take a pic of the plumbing under the sink... Maybe I can think up

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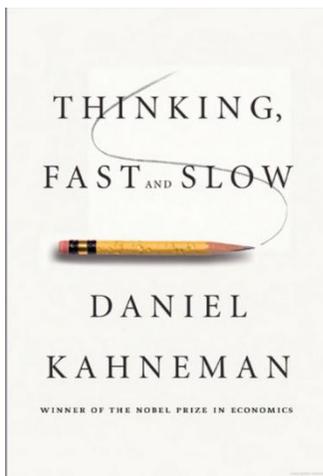
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a solution that you can pass along to your principal to get the district to invest some time and money to get hot water in there..."

Later in the day, as she put in her unpaid weekend shift at her school preparing for the upcoming week, she indeed took that pic and sent it along to me... I examined the pic for a few seconds and diagnosed a potential source of the problem... When my wife returned home, I asked her "Um... did you notice the utility box on the wall?" ... "What are you talking about?" ... I showed her the pic she had taken and pointed to the box... "Huh... Never noticed it... What is it?" "I'm pretty sure it's a little tankless electric water heater... See the one line from the wall into the box, another line from the box to the sink faucet, and the conduit connected to the electrical outlet... I presume it works like our little "Insta-hot" unit... Now, maybe the breaker to the electrical outlet has tripped and the maintenance guys never reset the breaker because no one ever told them about the lack of hot water... Or maybe the unit is 'dead' and just needs to be replaced... In either case, there is a clear solution to the problem..." Now, here's the thing: how did my wife and dozens of her fellow teachers over a 5- to 6-year period look at that box every day and not once wonder "what's that thing do?"



After a break, let's return to Kahneman's "Thinking Fast and Slow" for a possible answer!



In "Thinking Fast and Slow", Kahneman writes that a heuristic is a simple procedure that helps us "find adequate... answers to difficult questions." System 1 sometimes uses a heuristic to "substitute" a difficult question with an easier one... Let's take "How happy are you with your life these days?" and substitute it with "What is your mood right now?" Any question about one's life would require a far more detailed analysis than a question about one's current mood! The answer to the substitute question would probably come to mind much faster than the other but would it accurately reflect the answer I want to give to the actual question? In the case of El Granada's only cold-water bathroom, the answer to "why can't we have hot water" is undoubtedly difficult for anyone without technical knowledge of bathroom plumbing and methods of heat transfer... I suggest that my wife and her colleagues substituted the "hot water" question with the following: "why does our School Superintendent think so little of us?" For several years, I have heard complaints from my wife and several K-12 teacher friends of mine about the lack of respect from their respective school boards and district offices lead by their Superintendents... So, the "target question" from their collective System 1 about the lack of hot water plumbing is answered with "lack of respect"... The how that answer might be connected to the target question is a stretch, I'm sure their collective System 2 fully endorsed it and kept on truckin'...

Psychologist Paul Slovic proposed an "affect heuristic" in which "...people let their likes and dislikes determine their beliefs about the world." The thing about heuristics is they often lead to faulty, imperfect, and unreasonably optimistic/pessimistic answers... Though I sympathize with and generally support my wife's and my friends' feelings towards their schools' higher-ups, my Chemical Engineering degree and license as a Professional Mechanical Engineer made the question "why can't we have hot water" quite easy to answer for me without the need to employ a heuristic to make it any simpler... The "affect heuristic" is just one of many that psychologists have identified... The "availability"

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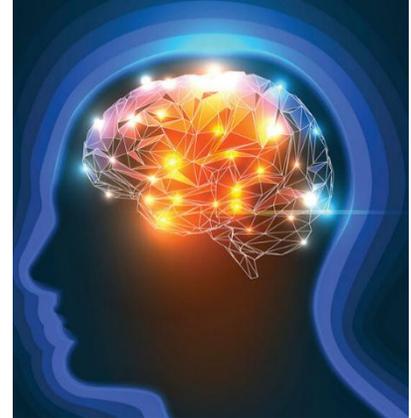
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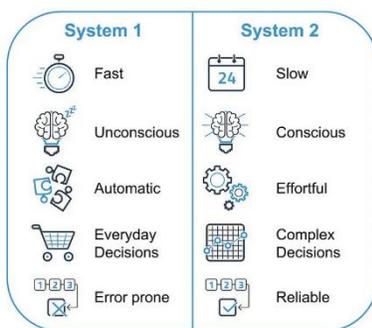
heuristic sees us perceive the probability of an event occurring based on how easily examples come to mind... This means the characteristics of our memories (time, place, occurrences, feelings evoked) heavily influence our perception... "Anchoring" finds that people often rely heavily on the first piece of information they get (the anchor) over subsequent pieces... If that first piece is inaccurate or subsequent conditions make it less representative of the situation, people make decisions with catastrophic consequences... For example, someone gets a news report of a slow-moving wildfire that is several miles away... A few hours later, a new report comes in stating that the fire is less than a mile away and moving fast... If that someone anchored their perception on that first report, their perception of risk to themselves will be lower than if they never heard it!



After a break, Act Two: Fifty Years of Thinking Fast and Slow!

Act Two: Fifty Years of Thinking Fast and Slow – 1,125 words

Starting in the early 1970's, Daniel Kahneman and his research partner, Amos Tversky, began conducting experiments to better understand our judgement and decision-making especially in situations of uncertainty... After several years devoted to documenting biases of intuitive thinking, *Science* magazine published their article "Judgment Under Uncertainty: Heuristics and Biases"... They describe the "shortcuts of intuitive thinking" *aka* heuristics, explain nearly two dozen biases generated from these heuristics, and further explain their role in our judgment... They continued to collaborate moving from studying our judgment to examining the outcomes from our judgment *aka* our decisions... For example, on a two-lane highway I passed a slower moving vehicle... That was a decision... I based that decision on a couple of things: 1) my knowledge of the vehicle code making such a pass legal on that stretch of highway and 2) my JUDGMENT that the distance needed to make the pass given the speed differential between my vehicle and the other was sufficient to safely make the pass...



Some five years after their *Science* magazine article, they published "Prospect Theory: An Analysis of Decision Under Risk." This published work became one of the foundations of behavioral economics... In 2002, Kahneman received the Nobel Prize in Economics largely from his work on judgment and decision making... Unfortunately, Amos Tversky died in 1996 of metastatic skin cancer... Since Nobel Prizes are not awarded posthumously, he was not eligible to receive the award that Kahneman is adamant that he richly deserved...

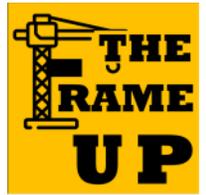
Fast-forward to 2011, Kahneman publishes "Thinking Fast and Slow..." as a contemporary view of how the mind works given "recent developments in cognitive and social psychology"... [We're going to present selected insights and takeaways from the first four parts of the book...](#)

Part 1 – Two Systems... Our System 1 operates quickly without voluntary control while our System 2 deals with mental activities that require heavy lifting... System 1 completes the phrase "bread and..." and leaves filling out a tax form to System 2 or an accountant! To get through the day without blowing a fuse, we avoid overloading our minds by employing short-cuts to solutions that reduce our mental effort and the need for focused attention... In other words, System 1 is generally in the driver's seat! With System 1 at the wheel, we rely heavily on impressions and intuitions when making judgements... Fortunately, System 1 gets it right most of the time, but it's not perfect... Although System 2 has a much better driving record than System 1, nobody likes a backseat driver! Recall "substitution" where System 1 replaces a difficult question with an easy one just to avoid having to ask System 2 for help! System 2: "I thought we

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were driving to that new French restaurant downtown"... System 1: "I'm in the mood for a Double-Double... Hey look, there's In-N-Out!"

After a break, we'll explore "Part 2 – Heuristics and Biases" of "Thinking, Fast and Slow."

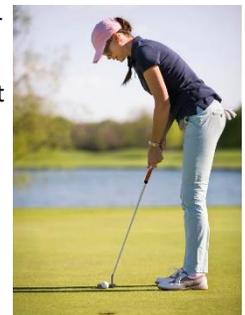


Part 2 – Heuristics and Biases... Recall that the "substitution" heuristic is one of many short-cuts that we employ to get to an answer that is probably right but often is not... Turns out that the "anchoring" heuristic affects both systems... System 1 receives some information that "primes" its assessment of subsequent information... Say on a tour of homes for sale, your realtor shows you a very expensive house first... You might perceive the high asking prices for the second and third homes on the tour to be more reasonable, if you've anchored your perception of value on the higher price of the first... The "availability" heuristic in which System 1 determines the likelihood of an event based the relative ease of examples coming to mind... Let's say I have doubts about how to proceed in a situation, but I quickly recall several times I was doubtful about similar situations and make the "right" calls... I'm much more likely to trust my

intuition in my current situation and forgo waking up System 2 to engage my thought-process before proceeding... Let's bring back Paul Slovic to provide the deeper insight of this heuristic: "the ease with which ideas of various risks come to mind and the emotional reaction to these risks are linked." I just read a [story about the deaths of 15 people](#) from the collapse of a 2-year-old concrete and glass canopy attached to a railway station in Serbia... Is my emotional response to walking under similar structures in the future going to change with this new data point?

Part 3 – Overconfidence... You've undoubtedly heard the phrase "hindsight is 20/20"... Well, it's more like 20/50, maybe even 20/100... Why is that? We believe we understand the past due to our constant adjusting of it to fit the present... We then believe the future is knowable given our understanding of the past... WRONG... Say it with me "past performance is not indicative of future results"... This "illusion of understanding" is mated to our "illusion of validity"... System 1 assumes "what you see is all there is" and crafts a coherent story to explain our opinions of the world... But the high confidence we have in the validity of our opinions is not a careful weighing of information but more a measure of our story's clarity... Though it may be clear and "make sense", the story isn't necessarily true! You've probably heard stories of families, after a string of 3 or 4 children of one gender, trying "one last time" for a child of the opposite gender... Again, "past performance is NOT..."

Part 4 – Choices... Loss aversion is the well-understood concept that humans generally feel lousier about losses than they feel happy about equivalent gains... One noted observation is that "professional golfers putt more accurately for pars than they do for birdies!" Thus, illustrating that we generally work much harder to avoid losses than we do to achieve gains... Kahneman points out that this is an "ever-present feature of negotiations, especially renegotiations of an existing contract... a proposed change in any aspect of the agreement is inevitably viewed as a concession that one side makes to the other... The concessions you make to me are my gains, but they are your losses..." The pleasure that I feel from my gains falls far short of the agony you experience from your losses...



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In the "Conclusion", Kahneman states that there's a thing that can moderate the idiosyncrasies of our Systems 1 and 2 that lead us down the wrong paths time and again... The thing: Organizations!!! "Organizations are better than individuals when it comes to avoiding errors, because they naturally think more slowly and have the power to impose orderly procedures. Organizations can institute and enforce the application of useful checklists, as well as more elaborate exercises, such as reference-class forecasting and the premortem. At least in part by providing a distinctive vocabulary, organizations can also encourage a culture in which people watch out for one another as they approach minefields. Whatever else it produces, an organization is a factory that manufactures judgments and decisions... An organization that seeks to improve its decision product should routinely look for efficiency improvements... The operative concept is routine."

After a break, Systems 1 and 2 have it out in Act Three: The Case of Mistaken Cost Identity.

Act Three: The Case of Mistaken Cost Identity

During the COVID-19 pandemic, I was supporting a team as it constructed a biopharma manufacturing facility... The protocols put in place to mitigate transmission of the virus, working during normal but frigid weather conditions, as well as a more contentious than normal relationship between owner, designer, and contractor made for a tough work environment... At the weekly meeting to review on-going change orders, the owner's cost consultant had a question: "why are the unit costs for these concrete scope change orders so varied, shouldn't there be some consistency?"



First, change orders are common if undesirable agreements that scopes necessary to complete projects were not included in the projects' contract documents of drawings, models, and specifications... Second, it was kind of the cost consultant's role to answer those types of questions independently of us, the general contractor... Third, the response from our project controls lead, "those were the costs given to us by our trade partner", was a non-answer! I hope you recognize System 1 in the question and the answer... Wake-up System 2!

With that, please welcome this episode's guest, Alysha Fuchino... Alysha recently joined the CRB Group, a leading global provider of integrated engineering, architectural design, construction, and consulting solutions, as a Senior Discipline Estimator focused on Mechanical-HVAC and related systems... She has worked in the construction and facility services industries for over a dozen years after graduating from California State University at Chico with a degree in Mechanical Engineering...

Blair Calhoun: All right. All right. All right. All right. So first, Alysha, start with your background. Again, we chatted about that a little bit, but you know, you give me the thumbnail sketch. Yeah.

Alysha Fuchino: Happy to start there. So I've had, I guess, the opportunity to experience construction in all different layers, which I'm grateful for. But from service to high-level construction, even some consulting. By education, I'm a mechanical engineer. And I guess my introduction into the industry started before just going to college.

So I think it was in 2008, I began, I call it interning, but let's just say it was an unpaid job working for my dad, which is such a great way to start. And that was on the service side. And that was specific to subcontracting. So it was things like dispatch, equipment maintenance, you know, these like 24-7 nonstop emergency calls in construction. And then...

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As I was going to school studying mechanical engineering, I worked with a mechanical design build contractor towards the last couple years of schooling. And that was where I sort of got the foundation for mechanical design, even an introduction into estimating. They just had started an estimating department, so I was able to get exposed to mechanical design, estimating, project engineering, and management all within that design build firm, which was great. And that was, gosh, that was just before going into GC. So in 2016, I transitioned into the general contracting side of construction. So I started as a mechanical estimator.

and the gc side and that grew into i believe they called it mechanical pre-construction manager they are two two different things so you and i both know that like titles only tell you part of the story and what you actually do right so my scope wasn't just solely mechanical in in amongst those roles it was it was um uh let's say not just hvac so we're looking at mechanical wet and dry, plumbing dirty plumbing process piping medical gas all of these things fire protection controls it was so it wasn't just mechanical right and um eventually everything it basically was everything except electrical low voltage at the time and then let's say my transition out so going through all these tiers ended up being a mechanical or MEP group manager so when I had transitioned to um... My second GC, my role evolved to MEP group manager. And I think the manager in the title was nice, but what really wasn't, and we were briefly talking about this before jumping on, was it gave me a chance to now sit in a role where I could grow people. And it gave me that responsibility. It was official. I was now able to be able to build a team and people.

So mentorship and teaching was a part of that role. So being able to see the industry from that lens over the last five years, five years, I've now expanded into electrical systems, fire alarm, everything related to low voltage. And so I guess we could say that the last 10 years of my career has been MEP pre-construction. Got it. Got it. Yeah. Yeah. And so.

Blair Calhoun: That's great because it leads into this question. Again, I think of pre-construction, as I said in the question before, as three core functions. So the design, the estimating, and then the procurement piece of it. Do you see it similarly?

Alysha Fuchino: I guess I do, but I see those three things as being more of the tools or the resources. So for me, I look at it like, why does pre-construction exist? It exists to protect the client's investment. Ideally, project management is the same way, but the difference is that in pre-construction, to me, it's about managing those unknowns. There's a lot of unknowns in pre-construction that really delineates project management. So I say, well, why does pre-construction exist? It's about that investment, client's investment, protecting that client's investment. And then...

The core function of that is like I see that as risk and asset management. So I guess I would say before construction starts, right, what are our largest risks in pre-construction? Yeah. Go ahead. Go ahead. No, well, you've been using the word protect against what specifically? Yeah. So, so many things. But protect against like some of the things as if design may be incomplete.

At the time, whatever drawing sets you have, who knows what the existing site conditions could be? So there's a lot of unknowns there. Procurement timelines are unclear when it comes to pre-construction. And I think later on we could talk about what I mean by that. And then even when we think of things like the market types that project's in, constantly fluctuating, changes in design.

Architectural changes, shifting and changing nonstop, which is just a domino effect along the way of cost, design, scope changes and procurement issues. So, you know, and then I think you mentioned it being design, estimating and procurement. I think those are the tools, the four main tools that help us manage that risk and protect the client. So design, estimating, procurement. I might even add in the procurement is. essentially scheduling but might also add in scheduling as well

Blair Calhoun: I suggested Alysha was protecting her clients against significant failures... Recall Amy Edmondson's definition in Episode 1: 'failure is an outcome that deviates from the desired results...' Alysha's expertise is in

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Mechanical-Electrical-Plumbing systems aka MEP... I asked her to describe the challenges created by the interdependence of these three major building systems...

Alysha Fuchino: So, because they're deeply interconnected at times, when we think of electrical, mechanical, these items, they go together functionally, that I almost feel that if one person oversees all MEP scopes,

That coordination between can actually be a lot smoother. But more often than not, structurally, at most and if not all companies I've been a part of, they are different trades, different people for each trade. And somehow we need to work on that collaborative mix. We need to talk. We need to work on alignment. I think that's the biggest thing because we do see this divide between estimating disciplines that challenges emerge at that divide. So very often.

We're sitting in rooms in design meetings, design management meetings. It doesn't matter whether it's multiple trades. It could be engineers. It could be the GC, subcontractors, design build partners, clients all in one meeting. It's too many chefs in the kitchen at some point. So it's always multiple chefs in the kitchen trying to get their point across. I think each estimator is skilled when we separate those divisions, but alignment is critical.

So, for example, mechanical can assume that there's one HVAC system in a building, depending on level of design. But electrical might be utilizing a different system in their mind for power loading and doing some building loads. And so we could be looking at two different design outcomes separately. Another example I like to think about is sometimes plumbing... indoor plumbing and civil and site have this fight of who goes where where's that delineation point it's not my scope it's yours so from a uh from a design perspective early on coordination is huge especially in pre-construction because it ultimately always comes down to cost total cost capture matters it doesn't matter whether we're at budget it doesn't matter whether we're at GMP (Guaranteed Maximum Price)... That number from the budget sticks in the mind of the client and we need to do that value justice. And so when we're interconnecting those MEP systems, collaboration is huge because cost speaks, money speaks. Yeah.

Blair Calhoun: 'That number from the budget sticks in the mind of the client...' Can you say 'anchoring'?... After a break, I continue my conversation with Alysha Fuchino of the CRB Group..."

Blair Calhoun: Recall, Alysha described estimating as a tool of Preconstruction... I asked for her 1st step in applying that tool?

Alysha Fuchino: Generally, I make sure that I align with certain points. So I either align with the client or the internal team actually both let's say both we align with the client expectation and the internal team's deliverable expectation through these items so i'll do i need to know the project region where is the job located what's the size of the job square footage wise what market are we sitting in and sometimes even so far down as to the sector of the market but not always it really just depends on the project market depending on how deep i go whether it's new or existing construction. Okay, those are four points. And then there's the timeline of the deliverable, the level of design detail, and the expectation of the estimate. So the first four items, project region, project size, which is square footage is how I'm thinking, project sector, and new versus... existing construction. If I have those four points, it's actually fairly easy to develop a ROM number off of those, just those four points. Because it, even if I have a blank sheet of paper or, you know, industry lingo, that onion skin drawing of absolutely nothing, I'm still able to come up with the soft ROM that will encompass and give them an idea of where they're trending. Now, if I know these four pieces,

I'm able to confidently at least give the client the number. Now, I'm going to go back because I just said confidently. I was thinking we were earlier talking about protecting the client, but it's also about protecting the client with confidence. If you're not confident in your understanding of what you're developing, then it's like one of those energetic effects. If you're not confident, then the client certainly is not going to be confident. So, you know, you got to work on that foundational.

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Blair Calhoun: Yeah, and that, Alysha, is exactly how I feel when I was in the GC world. I said that is your principal mission. Your principal mission is to build the confidence in your client, not your confidence, your client's confidence because they have to make decisions... And they have to be confident in the decision is going to be in their interest. That's the thing. If you come a little sketchy, then they're going, well, I'm not sure what I should do. And that indecision or that unsureness is what really wrecks projects. It just, it wrecks them.

Blair Calhoun: Project Delivery is the method that owners organize contracts, assign risks, and structure relationships between designers, contractors, and consultants to meet project goals. Common methods include Design-Bid-Build, Design-Build, and Integrated Project Delivery aka IPD... I asked Alysha how the method of delivery might influence a project estimate...

Alysha Fuchino: I believe the project delivery does this. So I think of project delivery... in two ways i think when the project is or let me see um the first thing is if we're choosing and like a certain project delivery determines how fast i can complete the estimate so for example if i will if i believe that the job is more conceptual and i might actually be reversing this Other people might say, Alysha, that's kind of backwards because we think the other way. If the job is more conceptual, the speed of being able to develop the estimate is a lot quicker for me because there's a lot more room to make those assumptions, get those good clarifications, fill in those gaps. If I have to do a takeoff of a design already completed at CD stage, it's going to take me a lot longer to strip, to count.

to go through things i don't have that you can't use that expansive mind that you have to just fill in the gaps quickly build the design in your head and then throw it on an estimate paper so i look at it like um the delivery method kind of quantifies the speed at which i'll develop but it's also huge on how it affects the bottom line of the project as well as those procurement possibilities um and i think the biggest effect is

pricing and releasing the unknown so when we're talking about project delivery methods i think you listed some off here for us that is like IPD, design build partnerships design bill bid build partnerships and CM at risk i suppose the biggest thing is the fact that in any of those stages except for design bid build i would say you're pricing and releasing on the unknown in a lot of those stages so um you're basically making decisions off of assumptions or uncertainty at that point especially in those early on designs and i think i mean you're very well informed on this that like on an ipd delivery method you might be looking at tco temporary what is that temporary certificate of occupancy as a hard date with absolutely no flexibility and then have to release the equipment yesterday on a design set of drawings that's in schematic stage, right? So the chosen delivery method could absolutely shift the way that we lead an effort and support a client, again, with confidence. I think there's a lot of specific ways that chosen methods impact projects.

Early release of equipment. equipment procurement methodologies, those change all the time, depending on what delivery method you use. And by that, it's like, who's actually buying the equipment? And then who's assuming the risk of early bought equipment? Those are two different things to consider. The cost is usually developed around the assumptions in IPD. So if it's design build type deliveries. The cost is defined around collective assumptions. Yeah. Whether it's with the design team or with your own internal team. So it becomes less risky the closer you get to a design-bid-build approach. Everything else is risky.

Blair Calhoun: Yeah. And you described, in a sense, the notion of how long to take in pre-construction. That's been the debate. I think as long as people have been building buildings...

Blair Calhoun: I gave Alysha a quick tutorial on Systems 1 and 2 from 'Thinking, Fast and Slow' aka TFS then asked for her take on which System leads the way during preconstruction?

Alysha Fuchino: So, those are new systems to me. I've actually never heard, is it TFS? I've never heard of those, but now that you say that I actually. I think pre-construction is encompassing of both with heavyweight leaning, maybe on, on system number one, you're, you're thinking fast and you gotta be more proactive. You gotta, you gotta basically assume

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or, or what's, what is the word I'm looking for? You gotta, you gotta know the client's question before they're going to ask it.

So basically you're running through all of these things in your head in pre-construction. So it's very preemptive in that nature. And I think though it's both, it could swing both ways.

Blair Calhoun: Yeah, and the systems aren't independent of one another, right? That's the thing. They're not independent. What you're describing, right? System one is cruising along and every once in a while, you go, oh, I need to engage my system two. So that's the piece of it. It's like, right?

If we just – system one, system one, system one, we're going to make mistakes because system two is just saying, hey, I'm not doing anything until someone comes knocking on my door.

Alysha Fuchino: Well, hey, sometimes people sit in system two. We know that.

Blair Calhoun: Yes, and so that's what I'm saying. It's not like one's bad versus one's good. It's more like they're both working and that you have to – Kahneman's deal was you need to be cognizant of when your system one is running automatically and you need to check it like, oh.

Blair Calhoun: I agreed that System 1 runs the show day-to-day during preconstruction, but to use the tools of preconstruction effectively, System 2 must take over, right? Serendipitously, Alysha engaged her System 2...

Alysha Fuchino: I love these two delineations of... TFS because now I'm actually thinking about my most recent experiences in pre-construction. And I would say, you know that when you actually lean too much into system one, you start to lose pride or you start to lose quality in your own level of work.

And that's where you start to feel if you take if you take your job seriously into heart, that's when you actually start to feel like you're failing the client. And that's never a comfortable place to be because you're putting out. I don't know if you can use expletives, shitty work. And then you're also failing the client at the same time. And that's that is when you're overriding or overdriving. Number one, TFS, number one.

Blair Calhoun: Yes, yes, yes, yes. And that's a great way of kind of addressing it, like, almost emotionally. Like, to your point, like, if I don't feel really good about the work, I probably relied on system one too much, right?

Alysha Fuchino: I mean, and even honestly, it is emotional for sure, that take. But then think of it in the way of all of the deliverables, all of these measurable things, this cost, this procurement, all of that becomes, like,

it falls offline the quality the cost that that value you're pushing forward the things that are measurable then start to become something that you can't even measure against because even you're not confident like what am i putting together right

Blair Calhoun: As in Episode 3 with Jean, I posed the hypothetical situation in which she has been coronated the 'Monarch, Queen Of Construction'... What is her 1st royal decree?

Blair Calhoun: You know, your subjects are the owners, architects, engineers, everybody involved. You're the queen. You get to decide what is your first royal decree? What are you saying? Hey, all of you, this is what I want done.

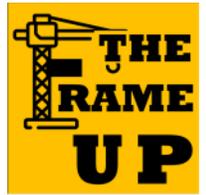
Alysha Fuchino: Okay. It's probably not going to be what anybody thinks it should be. Well, that's the beauty of this. Yeah, it would be my first royal decree would be that construction should not come at the cost of people's well-being.

Work should challenge people and construction is demanding of like 100%, whether it's physically, mentally, it is. But it should never take a toll on people's balance, people's lives. No project is more important than the people that are building it.

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So, I think my royal decree would be when we take care of people, and Blair, I mean truly take care of people, mind, body, and soul, the work takes care of itself. And I feel like in an industry of macho men, this is probably the softest answer that they're going to get.

Blair Calhoun: No, that is so awesome. I mean, it's great!

Blair Calhoun: Again, much thanks to Alysha for sharing her experiences and keen insights...

And what was up with those varied concrete unit costs on that manufacturing facility project? After the meeting, my System 2 was mystified... Concrete is a basic building material composed of water, sand, gravel, and cement mix whose cost during a project would not vary wildly... The consultant had grounds to question the costs, but he most certainly should have had the knowledge to answer the question without additional information from us if he hadn't jumped to the conclusion that we were trying to get away with something...

Cost accounting is a practice of separating costs into fixed, variable, and mixed categories so one can "follow the money" leading to opportunities to improve an operation's cost efficiency... It didn't take me more than 30 minutes to calculate that the "true" unit or variable cost was the same across the various change orders... The reported unit costs were so varied because the trade partner mixed in its fixed cost, which was considerable, into each order though the size of each order was different...

After our final break, my final thoughts...

The Outro – 494 words



Oh yeah, the hot water heater in El Granada Elementary's teachers' bathroom? Well, my wife alerted the school's custodian of the problem... It was the first time the custodian was made aware of the problem... After a week or so, I asked "what's up with the water heater in the bathroom?" "The custodian said the unit was broken, and he's ordered a replacement unit... It may take a few weeks..." "Well, that's progress, right?" "Yep"...

A few weeks later... "The new water heater was installed last week, and it's wonderful to have hot water... All the teachers are thrilled..." This is certainly a happy ending, but I can't help but

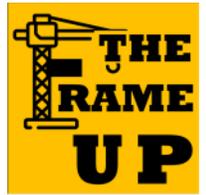
think about how many years have passed since the heater went on the fritz... This ending should have been arrived at so, so much sooner... Now, I'm not going to "blame the victims", in this case, the teachers, for this delayed justice... There should be a checklist of some kind that the custodian must complete every quarter, or at the very least, at the end of every school year so repairs can be made during the summer months...

Though I suspect that the "affect" heuristic led the teachers to substitute an answer to the heuristic question rather than the answer to the "target question", some teachers including my wife might have used the "representativeness" heuristic... Recall, when people use this heuristic, they estimate the probability of an event by comparing it to a known situation or stereotype... El Granada Elementary, like many public schools in the US, is kinda old... It opened in 1980... There are temporary classrooms that have been used for over two decades... The teachers have made numerous requests for small upgrades that went unfulfilled... They may have just chalked up the lack of hot water to the stereotype of stuff breaking down in an old school and that stuff never gets seriously addressed... And with so many other needs, hot water in the teachers' bathroom was an annoyance in the grand scheme of school building needs... BTW: The school's various building are going through a major rebuild!

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A coda: I was flying home from another visit to a business unit... Again, it was a United flight... And again, there was a copy of the latest "Hemispheres" travel magazine... Of course, I went looking for the advertisement for the "exact posture-correcting bra"... I found it! The image of women with soccer balls was replaced with that of a woman in a balletic pose, and the copy... STILL had "rehearing" rather than "rehearsing"... Is this an Edmundson "basic, complex, or intellectual" failure? Doesn't look like the "Right Kind of Wrong"... Regardless of the type, the failure was repeated, and there's a better than even chance it will be repeated again... I'm not sure what heuristic or combination of them is to blame for it, but System 2 needs to be hit upside the head because they're asleep at the wheel here!

I hope you enjoyed our fourth episode... If you missed the first three, don't worry... You can access them from same site as this episode under Season 1 - Episodes 1, 2, and 3...

Again, I'd like to thank my guest, Alysha Fuchino of CRB Group...

A big shout out to our announcer, ad break voice, and idea generator, Siobhan Calhoun... Couldn't do it without you!

Our Theme Music, made famous on the "Perry Mason" television show, is "Park Avenue Beat" by Fred Steiner!

Please share the link to this episode and return to The Frame-up site for Episode 5 to be released next month!

